Village of Peninsula

Preliminary Engineering Report

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Executive Summary

The Village of Peninsula retained Stantec Consulting Services, Inc. to conduct a Preliminary Engineering Report (PER) to determine the feasibility of providing sanitary sewer collection and treatment for the Village. The Village of Peninsula, Ohio resides in Summit County Ohio at the intersection of the Cuyahoga River and SR 303. All existing wastewater facilities are privately owned, with many failing and having findings from the OPEA. The Ohio EPA has documented failures of these systems due to age, poor soil conditions and small lot size, and has asked for the Village to develop a plan for corrective action.

The Village of Peninsula Wastewater Advisory Committee presented a "Summary of Findings and Recommendations" on 11/24/2015. The Advisory Committee provided an excellent high-level overview of the planning process.

Stantec used that summary to prepare a plan to identify appropriate alternatives, and then subsequently worked interactively with the community to evaluate and select the best and most appropriate solutions. The Advisory Committee's report was used as a basis for this process. The Village Advisory Committee identified the following objectives as critical:

- Affordable
- Modular, space efficient and easy to expand
- Visually unobtrusive with little odor, and noise
- Reasonable operation and maintenance requirements

Other factors to take into consideration are

Social and Historic Challenges

The following social and historic challenges facing Peninsula include the following:

- Maintain 19th century character of Historic District
- Do not encourage rampant growth
- Minimize disruption

Gateway to the CVNP

The Village of Peninsula is considered the gateway to the Cuyahoga Valley National Park (CVNP), which experiences almost 3 Million visitors each year. The Village is unique in the United States. Fifty percent of the land area of the Village is within the Park, but the Village is not controlled by the National Park Service (NPS). Additionally, there are many organizations that

utilize the Village for their constituents' entertainment, such as the Cuyahoga Valley Scenic Railroad (CVSR), the Ohio Erie Canal Corridor, and other groups and clubs coming to visit the Valley and enjoy the historic beauty of the Village.

The Village does not wish to experience growth that could change its historic character. In discussing this project with community leaders, the Village wanted to develop an approach that was economically reasonable, and achievable taking into consideration the size, location and topography of the Village. Also, the Village wished to maintain the character and charm of the Historic District and control growth. It should be noted that some large lot parcels are within and adjacent to the Village and is controlled by a "compatible recreational use" requirement, which may contribute to controlled growth.

In total, the project area of Peninsula is estimated to have 152 Equivalent Dwelling Units(EDU's) with 126 as residential, 24 as public or commercial and 2 connections of Industrial buildings.

Village of Peninsula Flow Breakdown			
User	**Number**	**Unit Rate**	**Extended Flow GPD**
Residential	126	200	25,200
Commercial			
• Winking Lizard	1	5,500	5,500
• General Die Casters	1	2,500	2,500
• Fishers	1	2,500	2,500
• Other	18	120	2,160
Institutional	5	240	1,200
TOTAL			**39,460**

Stantec considered several alternatives of different treatment and collection options and combinations thereof for providing collection and treatment of the sewage. These alternatives included three different collection types and five different treatment alternatives, such as conventional Wastewater Treatment Plant's (WWTP), Membrane Bio Reactor WWTP, Living Machine WWTP, decentralized or cluster Anoxic – Aerated Sludge WWTPs, and connecting to some existing regional treatment facility. These alternatives required differing numbers of pump stations and construction difficulty. Another issue considered was the historically shallow bedrock in the area and the prospect of crossing the Cuyahoga River which is considered Outstanding Resource Water by the Ohio EPA.

WASTEWATER TREATMENT PLANT (WWTP) SITE REQUIREMENTS

The serviceable area for the Village of Peninsula is a relatively small urban area defined in part by SR 303, the Cuyahoga River and steep hillsides. Large tracts of land for wastewater treatment plant sites do not exist. However, small parcels of land have potential for wastewater treatment for either a central WWTP or a set of WWTPs under the de-centralized concept.

The following attributes are desirable for wastewater treatment:

- Be of sufficient size, accessible, and proximate to the Serviceable Area.
- Located above the 100-year flood plain, well drained, not in a jurisdictional wetland, and not contaminated by prior industrial activity.
- Provide an isolation distance of at least 300 feet for non-enclosed systems and at least 150 feet for enclosed systems.
- Have the ability to be provided with three phase power and enough property to drill a water well to provide potable water.

Possible WWTP sites Include behind General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd, Woodridge Intermediate School, and Brandywine Golf Course.

After consideration of all alternatives, a present worth analysis was conducted to review total costs of operation and loan repayment over a thirty-year period. Additionally, a non-monetary matrix was created to considered other alternatives that may affect a selection of the best alternative for the Village.

The two alternatives recommended by Stantec is to 1) construct a traditional Gravity Collection system with conventional extended aeration or 2) construct a gravity collection system with an MBR treatment plant. A third option of connecting to the County regional system, although not the most economical at this time, should be explored further to see if an agreement could be reached where the Village receives a discounted rate and possibly some additional assistance for funding or operations. This option could also relieve the Village of the burden of operating and maintaining the system, and handling billing and collection of service fees. The contours of the project area allow for a limited depth of less than approximately 13' throughout the entire project area, which well boring logs confirm there should be limited conflict with bedrock.

A small 3" force main would transfer flow from the west underneath the Cuyahoga River using directional boring, and then transfer into the eastern collection system for final treatment at one of three potential locations. The total estimated construction cost of these alternatives is between $4,815,046 and $5,625,836, which correlates to an estimated monthly cost of $122.25 to

$156.75 / month. The monthly cost relies on minimal grant funding as little grants are expected to be available. This will provide a useful treatment life of well beyond 50 years with room for expansion, while additionally providing minimal maintenance time and costs for which the Village will have to perform or hire out. Each of these alternatives meet OEPA BADCT and will resolve issues with the OEPA that people inside the Village are experiencing well into the 2040's.

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I. GENERAL

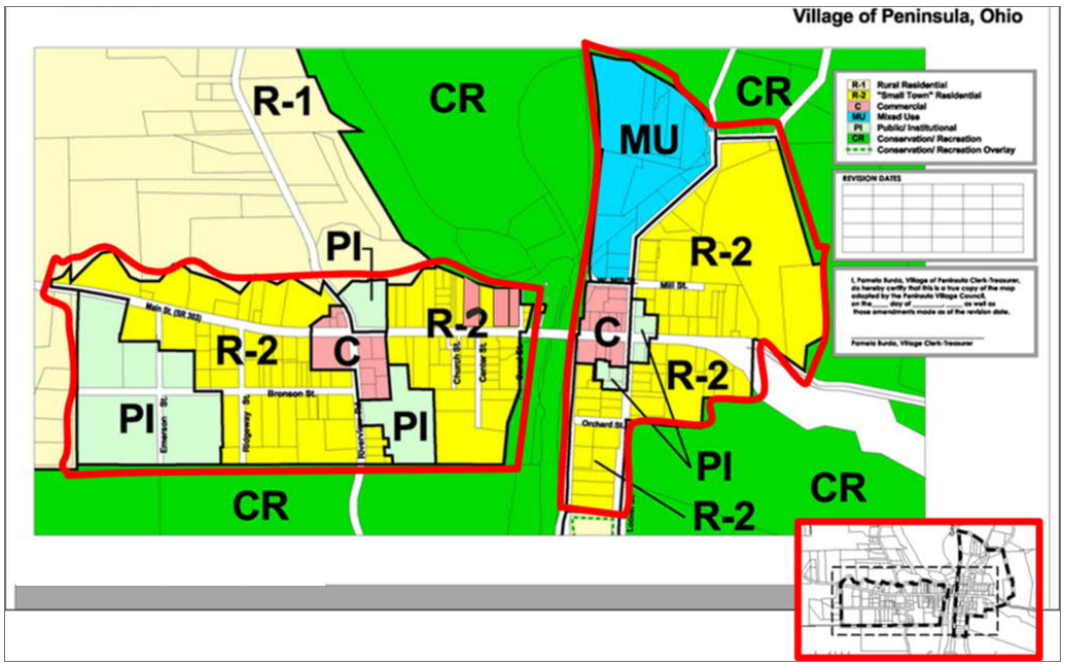
The purpose of this report is to present an analysis of the sanitary sewer and wastewater treatment facility needs in the Village of Peninsula, Ohio. The goal is to provide functional and operable wastewater conveyance and treatment facilities for 20 years and beyond. This report is a compilation of basic planning information and includes treatment criteria and assumptions; evaluates alternatives and costs; presents preliminary layouts; and outlines a wastewater treatment plant improvement plan to allow the Village of Peninsula to proceed toward project implementation.

II. PROJECT PLANNING AREA

The Village of Peninsula resides between the Cities of Akron and Cleveland in Summit County, Ohio. The project area consists of the downtown areas of the Village of Peninsula split by the Cuyahoga River and surrounded by Cuyahoga Valley National Park. The area services 152 Equivalent Dwelling Unit's (EDU). 126 EDU's are residential, 21 Businesses, 3 public buildings, and 2 industrial buildings.

1. LOCATION

Potential project area considered in this report are shown outlined in the following illustration provided by the Village of Peninsula, Long Range Plan. Note that all parcels indicated in the LRP map may not be included in the final design.



2. ENVIRONMENTAL RESOURCES PRESENT

FEMA Maps can be found in Appendix A. Soil Survey panels are included in Appendix B and a list of hydric soils as reported by the Natural Resource and Conservation Service may be found in Appendix B.

3. GROWTH AND POPULATION TRENDS

Table 1 : Population Trends

	Census	Census	Projections				
Year	1990	2000	2010	2017	2020	2030	2040
Population Estimate	559	602	565	597	612	663	718
Correlated off ODSA census data							

Data projected by use of Ohio Development Services Agency population change average of 0.8%. See Appendix G

For the purpose of this report, the population growth trend will be based according to the Ohio Development Services Agency, Office of Research. The Village of Peninsula population is projected to increase a projected 0.8 percent by averaging the growth of the last 20 years. Ultimately, any treatment works must be designed with a minimum of 0.8 percent allowance for growth.

III. EXISTING FACILITIES

Existing facilities in the area include on-lot systems, primarily on small lots that will be difficult to replace, and two package plants that service a few business units. All respected debt associated with these systems are privately held.

1. LOCATION MAP

There are no existing public utilities in the area.

2. HISTORY

From the year 2000 to 2010, the density of the population within the project area has experienced a decrease in population and virtually no growth.

3. CONDITION OF EXISTING FACILITIES

There are 6 NPDES permitted WWTP's servicing the project area that are owned by others, most of which have had significant non-compliance violations. Current package plants that operate in the wastewater district are poorly designed, create noticeable odor, are noisy, and are eyesores to the area. Many of the residential lots in the project area are on ¼ acre lots or smaller. The limiting factor for most residences to maintain a typical septic system is the geologically occurring soil types. There are three major soil categories that are present throughout the project area. They are categorized as follows:

Table 2: Soils within the Project Areas

Soil Category	Characteristics
CuB – Chili –Urban Land complex	Very Limited for Sewage absorption.
Cm - Chagrin- Urban Land Complex	Very Limited for Sewage absorption.
BeF – Berks silt loam	Very Limited for Sewage absorption.

Since much of the soil types located in the area are classified as very limited for leach field treatment, existing on lot systems are not a good solution for the area.

4. FINANCIAL STATUS OF ANY EXISTING UTILITIES

All debts incurred for utilities are private at this point.

5. WATER/ENERGY/WASTE AUDITS

There are no applicable audits that have been performed on any existing utilities.

IV. NEED FOR PROJECT

1. HEALTH, SANITATION, AND SECURITY

The Village of Peninsula residents currently rely on wells or cisterns for their water resource. The public welfare is at risk under current environmental conditions with the exposure to untreated sewerage in surface water resources such as the wells or cisterns. Many diseases may affect the public, including individuals living in the project area, but the visiting public are potentially even at a higher risk due to low tolerance to the environment. The Village is currently working with the OEPA to address the issue and provide service to the area.

2. AGING INFRASTRUCTURE

There is no current public infrastructure. Many existing private systems are in need of repair or replacement, and some may be failing.

3. REASONABLE GROWTH

For the purpose of this report, the population growth trend will be based per the Ohio Development Services Agency, Office of Research. The Village of Peninsula population is projected to increase 0.8 percent. Ultimately any treatment works should have the capacity for at least 0.8 percent growth. The Village is also located in the heart of the CVNP, that draws approximately three million visitors a year, which can increase demand and flows during peak times and is considered with all treatment options.

4. FLOW

Based on typical water consumption per household and the OEPA Greenbook design values, wastewater production at a WWTP would be anticipated to equate to about 200 gpd/customer. The proposed project has an estimated 126 residential EDU's and 26 commercial / industrial users for a projected flow of 39,460 gallons per day (gpd) There are a few businesses within the area that typically are equated to Equivalent Dwelling Units (EDU)s due to the peak flows of the visitors to the CVNP. These businesses' daily usage is correlated to about 550 gpd per EDU, thus setting a multiplier for their individual accounts.

At a minimum, the Village will account for an 0.8% projected growth, an end of life flow of 45,773 gpd. Anticipated growth could also be realized with the expansion of residential and

commercial users in the wastewater district. Due to the system being new, Inflow and Infiltration(I&I) should be minimal, however the small size of the community swells with the CVNP, CVSR, Ohio Erie Canal and other seasonal visitors which creates greater variances of flow. The result is a high peaking factor of five times the average flow rate. The total projected peak flows for initial startup are a peak flow rate of 197,300 gpd to 228,865 gpd in the future. Peak flow rates are short term and not used to size a facility. Due to the large variances, the OEPA Green Book requires flow equalization. Flow equalization will provide enough storage to keep the influent at a consistent rate for proper plant operation and efficiency.

5. ORGANIC LOADING

Based on flow computed in the previous section, organic loads for $CBOD_5$, TSS, and NH_3-N can be computed. The following table summarizes the influent organic concentrations and WWTP Loadings.

Table 3: Organic Loadings

Category	Concentration	Loading
$CBOD_5$	220 mg/l	37.5 kg/day
TSS	220 mg/l	37.5 kg/day
NH_3-N	30 mg/l	5.1 kg/day

The influent $CBOD_5$, TSS, and NH_3-N were approximated to values included in Table No.3 Comparison of Septage and Municipal Wastewater, "Ten States Recommended Standards" and provided from Metcalf and Eddy, 4th Edition, "medium strength sewage".

6. EFFLUENT LIMITS

Since any treatment facility would discharge to the Cuyahoga River, which then flows to Lake Erie, a sensitivity to the treatment technology will need to be paramount and ensure that it can meet any future limits set by the OEPA. The Cuyahoga River is considered an Outstanding Resource Water for Recreation, and as such, any new point discharge will be required to meet Best Available Demonstrated Control Technology (BADCT) as defined by OAC 3745-1-05. This requirement will be an issue that the Village needs to take into consideration when making a final decision on the selected technology.

Any proposed and/or expansions of WWTPs will result in an NPDES Application and Antidegradation Addendum by the OEPA. To establish the WWTP effluent limits under the

proposed future flows, the OEPA would require an assimilative capacity study of the receiving watershed near the WWTP if it does not meet BADCT. The assimilative capacity study usually consists of sampling upstream and downstream of the existing WWTP outfall as well as the outfall itself. Samples collected are analyzed by a laboratory for the following parameters:

- **TEMPERATURE**
- **PH**
- **NH3-N (AMMONIA NITROGEN)**
- **HARDNESS**
- **FECAL COLIFORM**
- **E. COLI**
- **TOTAL P (TOTAL PHOSPHPOUROS)**
- **TDS (TOTAL DISOLVED SOLIDS)**
- **TSS (TOTAL SUSPENDED SOLIDS)**
- **CBOD5 (CARBANACEOUS BIOLOGICAL OXYGEN DEMAND)**
- **O&G (OIL & GREASE)**
- **AMMONIA SERIES**
- **COD (CHEMICAL OXYGEN DEMAND)**
- **CONVENTIONAL METALS**

Sampling information is then incorporated into a computer model to determine the impact of the additional effluent flow on the quality of the receiving stream. This information is submitted to the OEPA with the Antidegradation Addendum Report and new effluent limits are established. Until the assimilative capacity study is completed, the effluent limits of the WWTP cannot be firmly established. However, for purposes of this report, the effluent limits in the following Table will be used, which are representative of the current Best Available Demonstrated Control Technology (BADCT) effluent parameters as set forth in Ohio Administrative Code (OAC) 3745-1-05.

NPDES Permit Planning Objectives for the Village of Peninsula	
Parameter	**30 Day Effluent Limit**
$CBOD_5$	10 mg/l
TSS	12 mg/l
Ammonia-N (Summer)	1.0 mg/l
Ammonia-N (Winter)	3.0 mg/l
Total Phosphorus (Year-Round)	1.0 mg/l (near future)
Total Nitrogen (TIN)	10 mg/l (future)
Dissolved Oxygen (DO)	6.0 mg/l

V. ALTERNATIVES CONSIDERED

The alternatives considered as a part of this Preliminary Engineering Report were to set forth a program that will be responsive to the needs of the community for the planning life of the project, which is typically 20 years. This long-range planning is important because improvements that are not properly integrated into a cohesive and organized plan may pose operation and maintenance problems.

1. COLLECTION FACILITIES

Scenario 1 – Project Area with a Conventional Gravity Collection System.

Scenario 2 – Project Area with a Grinder Pump (GP) Pressure Collection System.

Scenario 3 – Project Area with Cluster Collection System.

A. Conventional Gravity Sewer System

A.1 Description

A conventional gravity flow collection system is the simplest and most common system. Typically, 8 inch or larger diameter sewers constructed of vitrified clay (VCP) or poly vinyl chloride (PVC) pipe are installed. The system relies on the force of gravity to transport the wastewater from the houses to the sewers and eventually to a central treatment plant or to a lift station. The lift stations then force the sewage to the treatment facility. This method of collection completely eliminates the need for individual septic systems, since the treatment plant will treat the raw sewage. With this option, the Project area will have a gravity collection system with lift stations at the low points to collect and pump the sewage to other portions of the system or the treatment facility.

A.2 Design Criteria

Typically, sewer lines are installed on a gradual slope of at least 0.4% for 8-inch sewers. Conduits and lift stations will be designed to hydraulically carry peak hourly flow conditions for all flow to be carried by each portion of the system.

A.3 Map

See Appendix I.

A.4 Environmental Impacts

Specific environmental impacts only relate to the construction activities to implement the project. The system will fall within the public right of way where soil conditions have been previously disturbed, however, dust control and erosion controls will need to be implemented.

A.5 Land Requirements

All land required to implement a gravity collection system should be able to fall within public right of ways. In the event an easement may become necessary; its location would be adjacent to the public right of way for location of sanitary lines and/or lift stations. No need for any easements has been discovered through this phase.

A.6 Potential Construction Problems

Traffic control may be needed to limit any lane changes or shoulder interferences. There may be other utilities such as gas lines, electric and telephone lines, which will require horizontal and vertical separation from the sewer. Additionally, the depth of gravity sewers increases the chances of encountering rock, a significant difficulty for construction. Soil borings can be conducted to determine bedrock depths prior to construction.

A.7 Sustainability Considerations

a. Water and Energy Efficiency

Gravity sewers typically follow the natural slope of the land and only require power for the lift stations. Thus, the system is more efficient with both water and energy than pressure systems.

b. Green Infrastructure

Gravity Sewers require lift stations that use standard grid power. They are not a green infrastructure. Through the use of soft starters or variable frequency drives, the stations can provide energy efficient operations.

c. Other

None.

A.8 Cost Estimates

See Appendix C.

A.9 Advantages / Disadvantages

Gravity collection systems more commonly provide a 50 plus year useful life and have potential to carry higher flows in the event of un-forecasted growth. The disadvantage in comparison to pressure systems is there is more commonly a higher price paid upfront to cover larger diameter conduits, manholes and deeper excavation. However, that price is most often offset by high maintenance and replacement costs incurred by the pressure systems along with septic tank hauling in STEP systems. Further, gravity sewers require deeper excavation and therefor can be challenging to install in areas with shallow rock beds.

B. Pressure Sewer Systems

B.1 Description

The two major types of pressure sewers are the septic tank effluent pump (STEP) and the grinder pump (GP) system. The two systems differ only in the on-site equipment required to operate the system. The GP system utilizes individual grinder pumps located on or near the homeowner's property that pump raw sewage into shallow, small diameter pressure sewers or force mains. Typically, each service has a grinder pump station that receives sewage wastes from the property, grinds it up and pumps it into a pressure force main system located in the road right-of-way. Since the life span of a quality grinder pump typically does not exceed 10 years, the system will incur a major maintenance expense every 10 years.

A STEP system combines a septic tank with a pressure sewer system. In the STEP system, sewage goes to a septic tank where large solids settle out and the sewage is partially treated. From the septic tank, the effluent is pumped to the pressure mains in the same fashion as a GP system. The STEP system requires a smaller, non-grinder pump which has difficulty handling large solids. STEP systems must have the septic tanks pumped out on a regular basis or solids begin to clog the pumps.

For the cost effective analysis included herein, the GP system represents the Pressure Sewer alternative. The pressure sewers from either the GP or STEP systems would then discharge into major lift stations, which in turn would pump the wastewater to the treatment facility or other portions of the system. Typically, operation and maintenance of pressure systems are high due to the need for a pump at each connection. These systems are typically used in areas with a high-water table or where rock formations inhibit the installation of a gravity sewer system. Typically, STEP systems are more expensive to construct and operate than GP systems. If the GP option were utilized, the Village would have a grinder pump at each home and business. The grinder pumps would pump into a series of force mains that would connect into a major lift station. The lift station would then pump the sewage to the treatment facility or other portions of the system.

B.2 Design Criteria

Each GP system is connected to a grinder pump station and connected into an adjacent force main. Typically, 2-inch to 6-inch force mains constructed of polyvinyl chloride (PVC) pipe are installed with four feet of cover for this climatic region. Force Mains and lift stations will be designed to hydraulically carry peak hourly flow conditions for all flow to be carried by each portion of the system.

B.3 Map

See Appendix I for locations.

B.4 Environmental Impacts

Specific environmental impacts only relate to the construction activities to implement the project. The system will fall within the public right of way where soil conditions have been previously disturbed, however, dust control and erosion control will need to be implemented.

B.5 Land Requirements

All land required to implement a pressure collection system should be able to fall within public right of ways with the exception of the grinder pump stations which will need to be located on individual lots and would need easements from the property owners. In the event an easement may become necessary for the collection system, its location would be adjacent to the public right of way for location of sanitary lines and/or lift stations. No need for any easements for force mains have been discovered through this phase.

B.6 Potential Construction Problems

Traffic controls may need to be implemented to limit any lane changes or shoulder interferences. There may be other utilities such as gas lines, electric and telephone lines, which will require horizontal and vertical separation from the sewer.

B.7 Sustainability Considerations

a. Water and Energy Efficiency

Since the utilization of pumps for individual users increase power needs substantially beyond gravity collection systems, this alternative is not as Energy Efficient.

b. Green Infrastructure

STEP and GP systems are not green infrastructure.

c. Other

None.

B.8 Cost Estimates

See Appendix C.

B.9 Advantages / Disadvantages

A pressure collection system eliminates the failing onsite systems. This system may provide 40 years of useful life, however, grinder pumps are more obtrusive to the homeowners and would result in a tank at each property to hold the solids or a station to house the pumps. The disadvantage in comparison to gravity system is high maintenance and replacement costs and some less flexibility for growth. However, the upfront construction costs are typically less than gravity sewers. Initial indications were that, bedrock was shallow in the area, which could have made the pressure system more affordable due to the excavation costs for installing a gravity system. In compiling information for this report, it was determined that the bedrock was not as shallow as originally thought, thus making the gravity collection system much more viable.

C. Cluster Systems

C.1 Description

The concept for the cluster system is to only design for sewers in areas where there are users, then small wastewater treatment plant facilities will intercept and treat flow in multiple locations minimizing the infrastructure of the collection system.

C.2 Design Criteria

Each cluster could take on characteristics of a gravity or pressure system and/or combination. Another option is to utilize onsite septic tanks for initial treatment. This is known as a STEP or STEG system depending on how the sewage is transported.

C.3 Map

See Appendix I.

C.4 Environmental Impacts

Impacts will be similar to those described for the respective collection systems for gravity and pressure discussed previously. However, the collection system may have slightly smaller diameter piping and will not need to traverse streams due to the system clusters.

C.5 Land Requirements

Land Requirements will also be similar to the collection systems previously discussed. The collection system should fit on existing right-of-way with exception to septic tanks and potentially the treatment plants.

C.6 Potential Construction Problems

Potential construction problems again are the same as the other collection systems discussed. Additionally, if an onsite septic tank is chosen, additional easements will have to be obtained, or customer installed tanks will be required.

C.7 Sustainability Considerations

a. Water and Energy Efficiency

Energy and Water Efficiency varies significantly by site depending on chosen collection.

b. Green Infrastructure

Not a green Infrastructure.

c. Other

None.

C.8 Cost Estimates

See Appendix C.

C.9 Advantages / Disadvantages

Advantages to a cluster system would be that the project costs for collection can be minimized in comparison to a large connected collection system. However, disadvantages include less flexibility due to the smaller pipe sizes and project areas for larger future demands as well as higher operation and maintenance costs, since several small plants need to be maintained. Also, the cost of several small packaged plants is higher to treat the same amount of sewage as a centralized WWTP.

2. WWTP FACILITIES

Scenario 4 – Construct Centralized Conventional WWTP.

Scenario 5 – Membrane Bioreactor WWTP (MBR).

Scenario 6 - Construct Cluster Modular WWTPs.

Scenario 7 – Regional connection for treatment.

Scenario 8 – Living Machine treatment.

A. Conventional WWTP

A.1 Description

The typical WWTP for a project of this size is a conventional WWTP. A conventional plant consists of screening, aeration, clarifiers, sand filtration, and disinfection.

Site alternatives for the centralized plant include behind General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd also referred to as Dugway Hill, Woodridge Intermediate School, and Brandywine Golf Course, which would require a land purchase or lease.

The Village will have a need to hire services and/or employees to operate and maintain the collection systems and associated WWTP(s). The number of hours per week for an operator to be on hand as required by the OEPA is approximately 5-10 hrs/week per plant.

A.2 Design Criteria

For this type of system, influent is screened through one or more bar racks, trash traps, or grit chambers to remove non-organic material. From there the influent is distributed to the equalization tank or aeration chamber where biological consumption occurs. Next clarifiers settle out more particulates before dosing and filtration. Sand filters are then used to capture harmful organics and small particulates. Finally, the effluent is disinfected generally by either chlorine dosage or ultra-violet (UV) light.

A.3 Map

See Appendix I.

A.4 Environmental Impacts

Specific environmental impacts relate only to the construction activities to implement the project. Dust control and erosion control will need to be implemented. There will be a loading on the receiving stream from the outfall that will most likely enhance the receiving stream quality by discharging treated wastewater rather than failing septic tank effluent.

A.5 Land Requirements

A 1 acre site should provide adequate space for the WWTP.

A.6 Potential Construction Problems

The only construction problem may be to provide sufficient elevation not to be affected by the 100-year flood elevation.

A.7 Sustainability Considerations

a. Water and Energy Efficiency

Water and Energy efficiency is higher as centralized treatment increases efficiency, as opposed to the other treatment alternatives reviewed in this study.

b. Green Infrastructure

A conventional WWTP is not a green infrastructure.

c. Other

None.

A.8 Cost Estimates

See Appendix C.

A.9 Advantages / Disadvantages

An advantage to the conventional treatment plant is that the plant utilizes proven and well understood processes that meet OEPA BADCT. A conventional plant is relatively inexpensive to build and maintain and are available in pre-designed configurations to further reduce costs. Primary disadvantages to the conventional plant are larger footprints than some technologies as well as effluent quality that is not as good as some more expensive alternatives. In order to address the noise, odor and aesthetics, concerns indicated by the Village Wastewater Committee, a conventional WWTP would require some design enhancements, such as an enclosure, that would increase the costs to ensure these potential issues were addressed.

B. Membrane Bioreactor WWTP (MBR)

B.1 Description

The second WWTP option used for cost comparison is a Membrane Bioreactor (MBR) that can meet future stringent effluent requirements. The MBR option treats sewage using an activated sludge process with the use of micro-filters to separate the solids from the liquid wastewater. The membrane cartridges are located inside the aeration tank and remove the solids by filtering the water

through small openings in the membrane panels. Air from blowers is discharged below the membrane casings to create a cleansing action to prevent plugging and to provide the necessary oxygen for treatment. An MBR Plant operates much like a conventional treatment plant with the notable exceptions of secondary clarification and final filtration. Screened raw wastewater is mixed with activated sludge for biological removal of contaminants followed by mechanical removal of solids via the membrane. As a general rule, all MBR systems operate under the following conditions:

MLSS Concentration	8,000 to 12,000 MG/L
Sludge Age	30+ days

Site alternatives for the centralized plant include behind General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd, Woodridge Intermediate School, and Brandywine Golf Course, which would require land purchase or lease.

The Village will have a need to hire services and/or employees to operate and maintain the collection systems and associated WWTP(s). The number of hours per week for an operator to be on hand will be approximately 5-10hrs/week as associated with this report.

B.2 Design Criteria

The design typically consists of a 2mm fine screen prior to influent flow entering an anoxic basin mixed with recycle flow ranging from four to six times the average flow. The anoxic basin is outfitted with a submersible mixer and flow goes to a pre-air basin to be diffused with air. The flow then moves to the MBR basin(s) where air is diffused under the cassettes and a permeate pump draws water to go to UV disinfection and onto outfall. The recycle line can send flow to a waste activated sludge basin where sludge is further aerated and again sent through additional MBR cassettes to get four percent solids in the Waste Activated Sludge (WAS). The sludge is commonly taken to a municipal facility for further treatment.

B.3 Map

See Appendix I for facility location options

B.4 Environmental Impacts

Specific environmental impacts relate only to the construction activities to implement the project. Dust control and erosion control will need to be implemented. There will be a loading on the receiving stream from the outfall that will most likely enhance the receiving stream quality by discharging treated wastewater rather than failing septic tank effluent.

B.5 Land Requirements

A ½ to one-acre site should provide adequate space to later even double the WWTP.

B.6 Potential Construction Problems

The only construction challenge will be to provide sufficient elevation not to be affected by 100-year flood elevation.

B.7 Sustainability Considerations

a. Water and Energy Efficiency

Power usage is higher than conventional treatment types.

b. Green Infrastructure

This is not a green infrastructure.

c. Other

None.

B.8 Cost Estimates

See Appendix C.

B.9 Advantages / Disadvantages

The main advantage of the MBR treatment is that the resulting effluent water quality far exceeds BADCT standards placed on new discharges to surface waters. Another advantage is that the MBR plant has a very small footprint and can easily be increased in capacity with modular-type additions. The plant is also self-monitoring with failsafe items put in place. The MBR plant would also fair well with the concerns of noise, odor and aesthetics because the treatment facility could be constructed inside a building. Disadvantages are the increased power costs to operate the plant that are significantly higher than conventional systems.

C. Cluster WWTP System

C.1 Description

Multiple WWTPs are one alternative, which are facilitated by packaged plants. For this alternative, we have looked at Anerobic-Aerobic systems(AAS) treatment types. These WWTP's would be placed at multiple locations within the project area, segmenting the collection system.

Site alternatives for the cluster plants include behind General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd, Woodridge Intermediate School, and Brandywine Golf Course, which would require land purchase or a lease.

C.2 Design Criteria

For Gravity and GP collection systems, each plant would receive flow which goes to paralleling septic tanks with accumulative volume equal to 2.5 times the average daily flow. For STEP/STEG collection systems, each septic tank is outfitted with an effluent filter as is typical with septic tanks. Wastewater moves from the septic tank into the reservoir of the processing tank beneath the trickling filter. The treatment process uses unique characteristics of a patented filter media to construct a trickling filter in which the treatment occurs as it passes though the filter. The filter consists of a bed of highly permeable hydrophobic media situated over a reservoir into which the percolate drains. Within the reservoir is a pump that distributes a combination of percolate and newly added wastewater from the baffled septic tank to the top of the media. The units use polystyrene hydrophobic bead filter media, which occupy the upper portion of the treatment unit.

Due to the hydrophobic nature of the media, microbes present in the wastewater do not strongly attach to the media, but are rather entrained within the wastewater as it flows by gravity through the media. In this suspended state, the microbes use and transform the nutrients and organic materials provided by the constant supply of fresh wastewater to form new cell mass. The open spaces within the media allow air to freely pass through, providing ample oxygen to support the microorganisms. The percolate from the filtering process drains into the reservoir for further recirculation (approximately 70 times/day) or discharge. Several times per day, a portion of the wastewater in the reservoir is pumped back to the septic tank where denitrification occurs. Nitrification of the ammonium in the wastewater occurs in the mixed liquor as it passes through the media.

The timing and sequence of the recirculation of wastewater in the lower collection reservoir, as well as the recirculation of a portion of the waste back to the septic tank, is controlled by a programmable logic controller (PLC). The PLC also controls the discharge to the effluent. For some applications, the units are placed in series to enable performance to reach effluent requirements. The effluent then goes to UV disinfection.

C.3 Map

See Appendix I for system location.

C.4 Environmental Impacts

Specific environmental impacts relate only to the construction activities. Dust control and erosion controls will need to be implemented. There will be a loading on receiving streams from the various outfalls which may not meet BADCT. The system proposed here may struggle with meeting the BADCT limits because of the higher strength sewage that will be provided by the commercial businesses in the Village. Without the addition of a nitrification filter to aide in Ammonia Nitrogen removal the system may struggle with meeting these limits as shown with similar systems located in southern Ohio. This may require a specialized NPDES permit that will prove difficult to obtain, due to the Cuyahoga River Outstanding Water Resource designation.

C.5 Land Requirements

Each WWTP has a small foot print and should be able to comfortably fit On ¼ to ½ acre lots, but can be 1 acre depending on the cluster.

C.6 Potential Construction Problems

The only construction problem will be to provide sufficient elevation not to be affected by 100-year flood elevation. Design will be challenged with acquiring separate NPDES permits for each of the facilities.

C.7 Sustainability Considerations

a. Water and Energy Efficiency

These systems are sized for their need but are not especially efficient.

b. Green Infrastructure

Not a green infrastructure.

c. Other

None.

C.8 Cost Estimates

See Appendix C.

C.9 Advantages / Disadvantages

The advantages are that this plant can easily be increased in capacity with modular-type additions. The plant has a disadvantage in that meeting Ammonia concentrations of BADCAT are not particularly easy and may require specialized NPDES permits above the 1.0 mg/l without tertiary treatment. Additional disadvantages are the sheer number of pumps and PLC units that will become

part of the collection system adding to the operation and maintenance costs. The septic tank for each cluster system needs to be pumped regularly and the sludge must be disposed of and/or further treated. In addition to these issues, concerns of noise, odor and aesthetics will prove to be challenges with this system. The cluster WWTP system, because of its need for on lot tanks, may not address the odor concerns.

D. Connection to Regional WWTP

D.1 Description

The nearest connection to Summit County DSSS is at the intersection of Wooded View Dr. and W Hines Hill Rd. Connecting at this access point would require pumping sewage over 5 miles and over 250' of elevation from the Village of Peninsula. The current rate charge for treatment by Summit County Sewer District for non-metered sewage is $56.03 / month for residential users. If the Village is interested in this option, negotiations with the County would need to occur for more affordable rates to make this option feasible. The County is willing to negotiate a bulk user agreement similar to what it has with other users in the County. Under this arrangement the Village could get a discounted rate for treatment, which may make this option more affordable.

D.2 Design Criteria

The design would include a force main to extend to an accepted entry point in the County collection system. Three pump stations would be utilized to lift sewage over 250' in elevation to the entry point of the County system and either chemical treatment or aeration tanks would be required to keep flows from going septic.

D.3 Map

See Appendix I for system location.

D.4 Environmental Impacts

Specific environmental impacts relate only to the construction activities to implement the project. Dust control and erosion control will need to be implemented.

D.5 Land Requirements

All facilities to implement a connection to the County should be able to fall within public right of ways and an existing utility easement, but this issue would need verified during design. A portion of Akron Peninsula Road has been turned over to

the National Park so there would need to be coordination with the CVNP for access.

D.6 Potential Construction Problems

There may be other utilities such as gas, electric and telephone lines, which require horizontal and vertical separation.

D.7 Sustainability Considerations

a. Water and Energy Efficiency

Transfer of waste to a regional WWTP saves energy costs to the Village, though some of the savings is offset by the large head pressure that the pump stations must overcome as well as aeration power requirements.

b. Green Infrastructure

Not a green Infrastructure.

c. Other

None.

D.8 Cost Estimates

See Appendix C.

D.9 Advantages / Disadvantages

The advantage to this alternative is that the County will treat the sewage relieving the Village from needing to maintain and operate a WWTP as well as having to obtain an NPDES. The disadvantage is that the residents being served by the collection system will have little to no voice represented in rate increases beyond what would be established at the time of installation. The Village would also be required to share in any future County expansions most likely through rate increases. Negotiations with the County could allow for provisions to protect the Village, but any future rate increase would be shared by all the County customers, which in turn, should reflect on the Village as a smaller proportion of the flow.

E. Living Machine

E.1 Description

The Living Machine concept was introduced by the WAC as a potential educational tool to illustrate how ecology can provide wastewater treatment as a sustainable solution and also provide a green component to the project. The

WAC had looked at the system installed at the Old Trail School in Bath Township which was designed for 5,000 GPD and is required to meet BADCT requirements. That system has been operational for 10 years and currently treats flows of around 1,000 GPD. The system currently needs an overhaul to its instrumentation and control system but has met its limits as required in the NPDES permit.

Site alternatives for the Living Machine footprint will need to be much larger than the other conventional technologies previously discussed so additional land would be required. The sites already reviewed would not be considered viable which included behind General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd., Woodridge Intermediate School, and Brandywine Golf Course, which would require a land purchase or a lease.

E.2 Design Criteria

Functionally, the Living Machine is a two-stage subsurface constructed wetland system. As flow enters the system, it passes into an arrangement of holding tanks to remove settable solids. Effluent from these tanks then enters a subsurface flow wetland where the CBOD5 and TSS are removed. Flow is then pumped into a tidal flow wetland inside a greenhouse to remove Ammonia-Nitrogen. Following treatment in the second stage tidal flow wetland, flows go through an ultraviolet disinfection system prior to being discharged into a nearby stream.

The second stage of the Living Machine is a fill and draw system where flows enter a two-cell chamber in the greenhouse. As such, flows are treated in a batch style mode where chambers are filled and drained to incorporate oxygen into the root zones where Ammonia-Nitrogen can occur.

The Living Machine has been an excellent teaching tool at the Old Trail School. At design flows of 5,000 GPD, the system occupies approximately ¾ acre of land, which includes the greenhouse.

Depending on the flow rate and the need to further reduce the overall size of the system, a Living Machine could be preceded by a Moving Bed Biofilm Reactor (MBBR) to remove pollutants prior to flows entering the wetland system. Much of the cost of the system is associated with the tidal wetland and greenhouse. Cost must be evaluated carefully and nontraditional funding sources would have to be sought to defray expense. However, the system may be feasible in serving a limited number of buildings.

E.3 Map

None Provided

E.4 Environmental Impacts

Specific environmental impacts relate only to the construction activities. Dust control and erosion controls will need to be implemented. There will be a loading on receiving streams from the various outfalls which would meet BADCT. The flow characteristics of the Village and the peaks that are associated with the tourist season could be cumbersome for the Living Machine, so it is only recommended to do a smaller scale pocket area and not a Village wide system so that it would have a better chance of meeting its limits.

E.5 Land Requirements

Identifying suitable land that can be converted to wetland.

E.6 Potential Construction Problems

The one major construction problem would be obtaining enough land to construct the system because of the required components.

E.7 Sustainability Considerations

a. Water and Energy Efficiency

This system would be very energy efficient.

b. Green Infrastructure

This system would be considered green infrastructure.

c. Other

None.

E.8 Cost Estimates

See Appendix C. Note that the costs for a system that would serve the project area is provided for comparison to other options. Since there is no other system built to that size, the numbers cannot be verified but were based on general costs associated with similar work.

E.9 Advantages / Disadvantages

The major disadvantage here would be the size needed to provide a functional system that could serve the project area. Advantages would be the green infrastructure as the electric costs would be much less than other traditional solutions.

VI. SELECTION OF AN ALTERNATIVE

1. LIFE CYCLE COST ANALYSIS

A Present Worth (life cycle) cost analysis was completed to compare the feasible alternatives. All of the items from the cost estimate are included in cost-effective analysis, which may be found in Appendix E. The federal discount rate from federal Office of Management and Budgets Circular A-94 was used for determining the present worth of the uniform series of O & M values (in today's dollars) and the salvage value.

This rate was found at: www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html and at the time of this evaluation was set at 0.5 percent.

All alternatives would provide good service to the project area.

From the Table 4 below, it is easily observed that a pressure system and WWTP option carries the lowest total project costs, and gravity collection to a regional WWTP the lowest O&M costs. However, when accounting for the treatment charge that would be assessed to the project area for regional treatment the present worth shows the regional connections are least economical. The highest total project costs are associated with construction of a gravity collection system with a Cluster WWTP costing more than a connection to a regional provider and with more O&M costs, yet lower annual equivalent costs compared to a regional connection. The gravity system appears to be the most economical using the present worth analysis. Realistically, a gravity system provides a little more cushion for growth and can be more inviting for future developers who could help buffer loan payments and O&M costs as opposed to a Pressure or STEP system, which may end up undersized if development occurs in a concentrated area within the project area. Due to the advantages of a gravity system, it is the recommendation for this project along with a centralized WWTP. The following matrix helps visually identify our recommendation:

Table 4: Alternatives Cost Analysis

Alternative	Total Project Costs	Annual O&M Costs	Present Worth Annual Equivalent Cost / Customer
			20-yr
Recommended Option **Alt 1 : Gravity Collection System w/ WWTP**	$ 4,815,045.60	$ 43,350	$ 1,345.78
Alt 2: Pressure Collection to WWTP	$ 4,315,654.00	$ 84,020	$ 1,500.77
Recommended Option **Alt 3: Gravity Collection System to Regional WWTP**	$ 5,022,258.00	$ 17,052	$ 1,957.61
Alt 4: Pressure Collection to Regional WWTP	$ 5,188,050.00	$ 54,790	$ 2,237.08
Recommended Option **Alt 5: Gravity Collection to MBR WWTP**	$ 5,625,835.68	$ 54,850	$ 1,596.03
Alt 6: STEP Collection System with Cluster WWTPs	$ 5,179,379.76	$ 71,605	$ 1,765.58
Alt 7: Gravity Collection to Living Machine WWTP	$ 6,084,525.60	$ 43,350	$ 1,624.19
Alt 8: Gravity Collection to Cluster WWTPs	$ 6,109,330.56	$ 55,890	$ 1,711.11

A "**NO-ACTION**" alternative, as listed in the table below, would leave future homeowners with the responsibility of paying and maintaining a mandated mound system incorporating a septic tank, dosing station and mound leach system which may cost upwards of $20,000, and minimally $10,000, if even feasible for the location. Sludge hauling, sampling and annual operating costs for electric, UV bulbs and permit fees adds approximately $11,000 for each home installation over the life of the system. These estimated life cycle costs do not address the businesses or public institution requirements which would also need to design, construct, and install their own compliant treatment systems.

Disadvantages of a No-Action alterative

- In considering total system cost, the No-Action alternative life-cycle cost similar to that of a municipal system
- Many properties do not have adequate land or proper soil conditions to install onsite systems
- Homeowners would be responsible for their own system financing, typically paying much higher interest rates than a municipal funded system.
- With onsite systems, there is a continued potential for ground water contamination

Alternative "NO ACTION" (Homeowners)	**Total Project Costs**	**20 year O & M Costs**	**Present Worth Annual Equivalent Cost / Customer 20-yr**
No Action Alternative	$ 20,000.00	~ $11,000	$ $1550.00

2. NON-MONETARY FACTORS

Table 5: Non-Monetary Factor Matrix

	Low Construction costs	Low Annual Equivalent Costs	Addresses Health Risks	Low Environmental Impacts	Low O&M costs	Small Land Requirements (Footprint)	Provides Users with Voice on future rates	Provides easy expansion	Quiet	Low Smell **	Total
Recommended **Alt 1 : Gravity Collection System w/ WWTP**		X	X	X		X	X	X		X	7
Alt 2: Pressure Collection to WWTP	X		X	X		X	X			X	6
Recommended **Alt 3: Gravity Collection System to Regional WWTP**			X	X	X	X			X	X	6
Alt 4: Pressure Collection to Regional WWTP			X	X		X			X	X	5
Recommended **Alt 5: Gravity Collection to MBR WWTP**			X	X		X	X	X	X	X	7
Alt 6: STEP Collection System with Cluster WWTPs			X	X		X	X		X	X	6
Alt 7: Gravity Collection to Living Machine WWTP			X	X			X		X	X	5
Alt 8: Gravity Collection to Cluster WWTPs			X	X		X	X		X	X	6

** There may be odor when sludge is being removed from the wastewater plant via pumper truck.

Site alternatives for the centralized plant include areas to the north of Terry Lumber and General Die Casters, the abandoned roadway formerly called Akron Peninsula Rd., Woodridge Intermediate School, and Brandywine Golf Course, which would require land purchase or a lease. Other sites were considered within the project area but did not meet the required footprint or access needs of the Alternatives considered.

VII. PROPOSED PROJECT (RECOMMENDED ALTERNATIVES)

1. PRELIMINARY PROJECT DESIGN

The proposed alternatives recommended by Stantec are for a gravity collection system w/ Conventional Extended Aeration or MBR WWTP. However, if negotiations with the County can allow for a bulk rate and can satisfy the Village's future needs, then the County Alternative should be considered as a potential alternative as funding agencies favor regional connections. The recommended alternatives are described in further detail below.

A. Preliminary Project Design

A.1 Collection System Layout

The recommended collection system (since the depth to bedrock is less than originally anticipated) is a gravity system with manholes spaced a maximum of 400 feet apart, and at any change in grade or direction. A gravity collection system will allow for future growth if needed and is much simpler and less expensive to maintain than a pressure system. Since the Village does not have fulltime staff to maintain a system the gravity collection will be the preferred collection system for the Village. Although the gravity collection system will be underground there will be lift stations that will be visual. If a pressure system was chosen then either holding tanks or grinder pumps would be installed at each property, again primarily underground, but both holding tanks and grinder pumps have components that would be visible at each property, thus making the pressure systems less pleasing aesthetically. A proposed layout for the collection systems is shown in Appendix I,

A.2 Pumping Stations

There are one or two pump stations identified depending on WWTP location which will require relatively low Total Dynamic Head values and flows to be contingent to the force main leaving the station in order to create a 2-feet per second velocity in the force main in order to prevent solids from accumulating within the line. The pump stations will produce very little noise and odor issues, and with some landscaping or fencing, they can be generally hidden from the publics' line of sight.

A.3 Treatment

Conventional Extended Aeriation - The design typically consists of a trash trap after influent pumping with flow entering an EQ basin. The EQ basin will have pumps to pump flow into aeration tanks to begin conventional treatment. The

sewage will then be settled out through a clarifier before dosing, sand filtration, and final disinfection before entering the discharging stream. It is recommended that additional precautions be made to muffle the sound of the blowers to mitigate ambient noise for the Village through enclosures.

Membrane Bioreactor – The MBR option treats sewage using an activated sludge process with the use of micro-filters to separate the solids from the liquid wastewater. The membrane cartridges are located inside the aeration tank and remove the solids by filtering the water through small openings in the membrane panels. Air from blowers is discharged below the membrane casings to create a cleansing action to prevent plugging and to provide the necessary oxygen for treatment. An MBR Plant operates much like a conventional treatment plant with the notable exceptions of secondary clarification and final filtration.

2. PROJECT SCHEDULE

Ultimately, the cost to construct sanitary sewer in the program area will not be feasible without significant grant funding. Once funding has been obtained, the bidding process for construction can begin upon awarding a project, construction is expected to last approximately 9 months. A proposed schedule is reflected below:

TASK	BEGIN	END
Preliminary Engineering	**January 2017**	**October 2017**
Design Engineering / Permits	**January 2018**	**October 2018**
Project Financing	**October 2017**	**January 2019**
Bidding / Contract Award	**January 2019**	**February 2019**
Construction	**April 2019**	**November 2019**

3. PERMIT REQUIREMENTS

Permits will be needed for the Collection System and WWTP from the OEPA.

- A Permit To Install (PTI) for the sewer lines, lift stations and WWTP,
- NPDES for the discharge into the Cuyahoga River,
- Notice of Intent (NOI) for construction due to disturbing more than 1 acre, and
- Additional permits will be required as well from the State of Ohio for electric at the WWTP and lift stations.

4. SUSTAINABILITY CONSIDERATIONS

A. Water and Energy Efficiency

Energy efficiency will be better than most other alternatives due to gravity mainlines and centralized treatment. The gravity mainlines will use less power than a pressure system where each resident has a grinder pump and with a centralized treatment facility there will only be one treatment facility rather multiple as discussed in the cluster alternative.

B. Green Infrastructure

The alternative recommended are not considered green infrastructures.

C. Other

None.

5. TOTAL PROJECT COST ESTIMATE (ENGINEER'S OPINION OF PROBABLE COST)

See Appendix C.

6. ANNUAL OPERATING BUDGET

A. Income

A proposed rate structure based upon Equivalent Dwelling Unit (EDU) has been used to determine the expected rates. The worst-case scenario would be a 40-year loan at 3.5 % with each user paying a tap fee of $1,500 and to cover O&M, would require a monthly bill of $176.55/ EDU. Due to high median household income, significant grant funding is not expected to be available unless an income survey reveals a lower MHI.

B. Annual Operations and Maintenance (O&M) Costs

See Appendix D.

C. Debt Repayments

There are a number of funding sources in the State of Ohio that may be approached for a sanitary sewer and wastewater treatment plant project, such as that being sought for the project. With a few exceptions, including USDA Rural Development and the Ohio Public Works Commission (OPWC), the majority only offer below market rate interest loans. The following discussion is a primer to funding agencies who may be approached.

D. Reserves

Unless otherwise required by State statute, the debt service reserve should be established at one-tenth (1/10) of the annual debt repayment requirement (amount of debt that must be repaid to government in a given fiscal year).

VIII. PROPOSED FUNDING SOURCES

Ohio Water Development Authority (OWDA)

a. Overview

The Ohio Water Development Authority (OWDA) offers low interest loan packages available to political subdivisions throughout the state of Ohio to enable them to design and construct new/replacement sanitary sewers, storm sewers, wastewater treatment and water treatment. These loans are competitively awarded, but are relatively easy to receive. There are two types of loans available through the OWDA.

b. Planning Loan

This loan provides "seed money" for the project, and enables the applicant to complete the engineering design and other pre-construction tasks relevant to the project. Repayment of the planning loan is amortized over 20 years and the first payment is due 1 year after loan award. The loan is a 5-year loan with the final payment either being rolled over into a permanent loan or paid in 5 years. Once permanent funding is obtained, this loan must be paid in full immediately.

c. Construction Loan

This loan provides permanent financing. Repayment of the construction loan begins 6 – 12 months after the project has been completed. Payments are made semi-annually. The loan period can be up to 30 years. This loan cannot be repaid early. The Controlling Board reviews applications for both the Planning Loan and the Construction Loan monthly on the fourth Thursday of each month with the exception of November and December. The entire process usually takes 30-60 days and funds become available approximately 2-3 weeks after approval by the Controlling Board.

d. Unsewered Community

This fund is a grant program which has attainable eligibility requirements, with tiered award amounts from $250,000 to $1,000,000 based on the size and economic health of the area being sewered. The program is for construction of new public sewer systems addressing documented failing on-lot septics. The application process follows the same forms, deadlines, and timeline as the construction loan program. This project's dynamics would qualify for $250,000.

e. Conclusion

The advantage of this funding organization is the relative ease in obtaining loan funding. As was aforementioned, key disadvantages are the market interest rate and the penalties for early loan retirement. As a general rule, OWDA is a recommended funding source for the size of the project being pursued.

Ohio Public Works Commission (OPWC)

a. Overview

This program was commonly referred to as the "Issue Two Program" but is now known as Issue I. This program offers grant money, zero interest loan money, and loan assistance (pays interest accrued during construction on loans acquired from an alternate source, i.e., OWDA, commercial banks, etc.) for projects such as water and sewer projects, storm sewers, wastewater treatment needs, roads and bridges, and solid waste facilities. This is a very competitive funding program that can, per current state legislation, award up to 90% of the project cost in the form of a grant to qualifying applicants for infrastructure repair/replacement projects; and 50% for new infrastructure projects.

Zero interest loans and loan assistance grants are also awarded competitively. Awards vary, but can be up to $500,000 in grant and loan funds combined. It is customary to award some type of loan funds to a revenue-generating project such as water or sewer project. The loans have a payback period of either 30 years or equivalent to the project's useful life with no penalty for early repayment. Payment is made to the state twice each year, on January 1 and July 1. There is no repayment on the Loan Assistance grants, as these are grant funds.

Several factors are considered when scoring these applications, such as: the degree of matching funds available to the project, degree of readiness to proceed with construction, including engineering plans being completed. OEPA mandates of the project, other health and safety issues, economic condition of the applicant's constituents, number of people benefitting from the project, etc. The deadline for the application process is typically the first week in July with funds becoming available in July of the following Year.

b. Conclusion

Competition for OPWC funding is aggressive. Those communities who wish to seek grant funds are less likely to receive assistance, while those who seek

very low interest loans stand a greater chance. If the Village wishes to pursue funding through the OPWC, it is recommended that the funding request be limited to approximately $1,250,000 and include no more than $750,000 of grant moneys with the remainder low interest loan funds. Unlike OWDA loans, OPWC loans can be paid off early. OPWC should be pursued to the greatest degree possible, since those communities seeking loan assistance stand a reasonably good chance of getting something.

Community Development Formula Block Grant (CDBG)

a. Overview

This federally funded grant program is available to communities that qualify with 51% or more "low and moderate" income levels. If communities do not qualify due to the 2000 Census information, in order to be eligible to receive CDBG funds, an "Income Survey" must be conducted to prove 51% or more LMI households. Typically, only $30,000 to $50,000 is available to a community each year, but the County's entire allocation may be set aside for one project. Numerous types of projects are eligible for assistance. Projects eligible for assistance include: sanitary sewers, storm sewers, wastewater treatment needs, streets, sidewalks, parks, etc.

b. Conclusion

The application deadline is traditionally in the spring of each year, but has recently moved to every 2 years. Funds are available once the County completes the environmental review in early or late fall of the same year. The success in obtaining funding assistance through this program is determinate upon the ability to demonstrate that the community does qualify under "LMI" requirements. Unless demographic information is readily available from the 2000 U. S. Census or can be compiled from the local governmental planning agency, this process can be lengthy and difficult. Given programmatic census data, it will be very difficult for the Village to qualify for this program. If the Village elects to postpone this project for another nine to twelve months, then sufficient time may exist to conduct a survey and attempt to qualify.

United States Department of Agriculture/Rural Development (USDA/RD)

a. Overview

This program was formerly referred to as Farmer's Home. This has typically become a 25% grant, 75% loan program over the past few years. Loan interest rates are significantly below current market rates and repayment periods may run from 25 years to more commonly 40 years. It is a competitively awarded program. Some of the criteria include: low income communities, communities with very low population, and projects to meet established health and sanitary standards. Other considerations include: improved operating efficiency, service extension, amount of other funds provided, financial soundness and the amount of funding required. Projects eligible for assistance include: water, sanitary sewers, storm sewers, solid waste facilities and community buildings. The application process is very involved, and takes approximately 18 months from initial submittal to final approval and disbursement of funds. Applications can be submitted at any time throughout the year.

b. Conclusion

One of the benefits of the USDA Rural Development program is that it is the only "major" program that offers funding assistance in the form of grants. As was mentioned above, even though the application process can take time, it is worth pursuing in the event that the project is postponed for nine to twelve months. This option will most likely require regionalization for consideration.

Ohio Environmental Protection Agency (OEPA)

a. Overview

The Ohio EPA offers various loan programs to political subdivisions throughout the State to enable them to either design or construct water and wastewater infrastructure improvements. There are different types of loans available under this program; they include the Water Pollution Control Loan Fund (WPCLF), and the Ohio Water Supply Revolving Loan Program.

b. Water Pollution Control Loan Fund (WPCLF)

This funding program provides low interest loans for assistance with storm sewer improvements, new/replacement sanitary sewers, and wastewater treatment facilities. The applicable interest rates are typically below current commercial rates. These loans are typically repaid over the 20-year life of the loan. The WPCLF also provides zero interest loan funds for the planning and design portion of the eligible projects. (This program was formerly referred to

as the Village Capital Improvement Program.) Repayment of these funds is upon project construction or in 5 years, whichever comes first. This program provides loans for planning and design depending on the Village's median household income. Project applications are reviewed and ranked according to priorities, including: villages with no current systems, Ohio EPA mandating of the project, villages with insufficient sewer systems and villages needing to improve their sewer systems.

c. Ohio Water Supply Revolving Loan Program

This is a funding program that provides low interest loans for assistance with design and construction of improvements to community water systems. This is an extremely competitive program that rates all eligible projects according to established criteria: public health issues, continued compliance with federal and state requirements, effective management, consolidation/rationalization, affordability and population. The interest rates are below the market rate and are evaluated every three months. The loans are typically repaid over an extended period of time, not to exceed 20 years.

d. Conclusion

Although the WPCLF program requires much of the same work as USDA Rural Development, this organization offers perhaps the greatest guarantee for low interest loan funding. Unlike, its predecessor program, the USEPA Construction Grants program 1975-1992, funding through the WPCLF program is a "first come first served" program with funding virtually guaranteed for all who comply with the requirements of the program.

Water and Sanitary Sewer Program (Through Ohio Development Services Agency)

a. Overview

This program is a grant program for political subdivisions throughout the State to provide safe and reliable drinking water and proper disposal of sanitary waste. This program targets communities with 60% low to moderate income households and the project must service at least 60% residential users. This is also a competitively awarded program. Factors include: the percent of low to moderate income persons, the percent of other state and local funds being used to match the grant funds, Ohio EPA mandates, degree of readiness to proceed with construction and the ability to raise funds locally through user fees. Grant funds are available on a dollar for dollar basis (50% match) up to $500,000. Applications are accepted throughout the year for this program. The application process usually only requires 2 to 3 months.

b. Conclusion

If the low moderate income (LMI) criterion can be met, then this funding would be an option.

US Department of Commerce/Economic Development Administration (EDA)

a. Overview

This is a federally funded grant program that is available to communities and areas burdened by high unemployment or low per capita income. The public drinking water and wastewater treatment system construction or improvements must serve industrial and commercial users. Qualifying applicants may receive up to 50% of the total project cost. Project applications are reviewed and ranked according to set criteria. Funding consideration is given to communities with a high unemployment rate, the amount of new and permanent jobs created by the project, and the quantity of other public and private funds available. Businesses involved must be willing to sign a statement that jobs are in jeopardy if funding is not received. Initial proposals are accepted throughout the year. The complete process can take up to 3 years.

b. Conclusion

In the absence of specific proposals for economic development in the area, funding through this program should be considered a "long shot."

Army Corp of Engineers (ACoE)

a. Overview

This is a non-traditional federally funded grant program that is available to communities for capital improvements projects such as wastewater treatment systems. Applications are requested by OWDA and filled out on the SCEIG nomination form and then reviewed and ranked according to set criteria. Funding consideration is given to communities with a high unemployment rate, the amount of new and permanent jobs created by the project, and the quantity of other public and private funds available. The complete process can take up to 18 months.

b. Conclusion

Since there will most likely be limited grant funds available to the Village, it is recommended that a nomination form be submitted even though it may be a long shot.

IX. CONCLUSIONS AND RECOMMENDATIONS

The discussion in the preceding section presents information on various funding options in the State of Ohio that may be available for this project. Without grant funding, this project is not feasible. Based on a consideration of all factors (e.g. time requirements, LMI status, and anticipated benefits), it is recommended that funding be sought primarily through USDA-RD or OEPA. If it is believed that Community Development Block Grant Funding may be available, this and other similar alternatives could also be pursued. Further breakdowns of potential Funding scenarios are included in Appendix F.

Based on the criteria discussed previously, the following schedule is provided to obtain functional and operable wastewater treatment facilities through 2037 are:

1. The findings in the report leave the Village with three possible alternatives to consider based on the capital costs, ability to discharge to the Cuyahoga River and the long-term benefits. The total project cost associated with constructing a gravity collection system and Conventional or MBR WWTP is between $4,815,045.60 and $5,625,835.68. The Operation and Maintenance cost will be between $43,530 and $54,850 per year, and to finance the debt and Operation and Maintenance cost, the normal user could expect a sewer bill between $122.25 and $156.75 /month with minimal grant funding.

   There is a potential for some savings with the County if they were willing to cover some of the costs, therefor the Village may want to further explore the County regional option to see if they would operate the proposed WWTP. If the County option is selected, the Village could possibly be relieved of the process of operating and maintaining the system, and handling billing and collections.

2. Design and permitting phase of the proposed project will most likely take about 12-18 months. The Construction Phase will be about 9 months.

3. The Village will have to hire additional employees to help operate and maintain the collection system and WWTP. The number of hours per week for an operator to be on hand is approximately 5-10hrs/week per plant as associated with this report.

Recommended Next Steps:

1. **Hold public meetings to discuss the project with the residents and businesses.**
2. **Identify sources of funding including traditional and non-traditional, and apply as applicable.**
3. **Continue discussions with the County towards a bulk agreement and potential funding to help offset the capital costs and finance the project.**
4. **Continue dialogue with the OEPA on proposed options.**
5. **Select a preferred alternative.**
6. **Begin a Dedicated Source of Repayment to position the Village to secure loans to begin the Design Engineering Phase of the project.**

I. APPENDIX A – FEMA PANELS

National Flood Hazard Layer FIRMette

Legend

- Cross-Sections
- Base Flood Elevations

Flood Hazard Zones

- 1% Annual Chance Flood
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

LOMRs

- Effective

Map Panels

- Digital Data
- Unmodernized Maps
- Unmapped

This map complies with FEMA's standards for the use of digital flood maps. The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. The base map shown complies with FEMA's base map accuracy standards.

The NFHL is a living database, updated daily, and this map represents a snapshot of information at a specific time.

Flood risks are dynamic and can change frequently due to a variety of factors, including weather patterns, erosion, and new development. FEMA flood maps are continually updated through a variety of processes. Users should always verify through the Map Service Center (http://msc.fema.gov) or the Community Map Repository that they have the current effective information.

NFHL maps should not be created for unmapped or unmodernized areas.

FEMA

Date: 2/24/2017 Time: 1:00:28 PM

National Flood Hazard Layer FIRMette

Legend

- Cross-Sections
- Base Flood Elevations

Flood Hazard Zones

- 1% Annual Chance Flood
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

LOMRs

- Effective

Map Panels

- Digital Data
- Unmodernized Maps
- Unmapped

N

This map complies with FEMA's standards for the use of digital flood maps. The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. The base map shown complies with FEMA's base map accuracy standards.

The NFHL is a living database, updated daily, and this map represents a snapshot of information at a specific time.

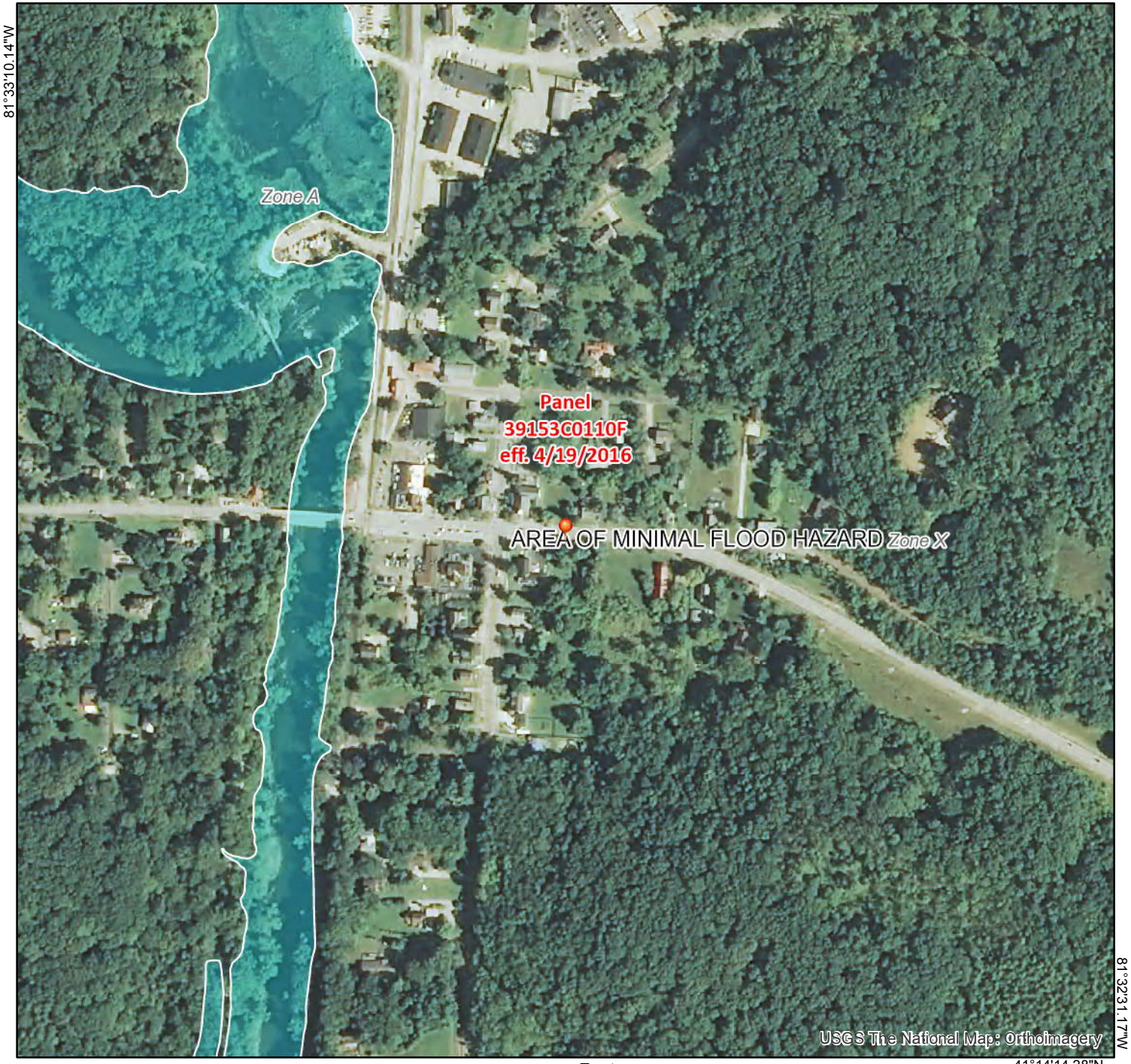
Flood risks are dynamic and can change frequently due to a variety of factors, including weather patterns, erosion, and new development. FEMA flood maps are continually updated through a variety of processes. Users should always verify through the Map Service Center (http://msc.fema.gov) or the Community Map Repository that they have the current effective information.

NFHL maps should not be created for unmapped or unmodernized areas.

FEMA

Date: 3/1/2017 Time: 10:50:17 AM

National Flood Hazard Layer FIRMette



Legend

- Cross-Sections
- Base Flood Elevations

Flood Hazard Zones

- 1% Annual Chance Flood
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

LOMRs

- Effective

Map Panels

- Digital Data
- Unmodernized Maps
- Unmapped

This map complies with FEMA's standards for the use of digital flood maps. The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. The base map shown complies with FEMA's base map accuracy standards.

The NFHL is a living database, updated daily, and this map represents a snapshot of information at a specific time.

Flood risks are dynamic and can change frequently due to a variety of factors, including weather patterns, erosion, and new development. FEMA flood maps are continually updated through a variety of processes. Users should always verify through the Map Service Center (http://msc.fema.gov) or the Community Map Repository that they have the current effective information.

NFHL maps should not be created for unmapped or unmodernized areas.

FEMA

Date: 2/24/2017 Time: 12:58:09 PM

II. APPENDIX B – NRCS SOIL REPORT

Sewage Disposal (OH)

This table shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical.

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. “Not limited” indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. “Somewhat limited” indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. “Very limited” indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Report—Sewage Disposal (OH)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Sewage Disposal (OH)–Summit County, Ohio					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (OH)		Sewage lagoons (OH)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BeF—Berks channery silt loam, 25 to 70 percent slopes					
Berks	90	Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
Ch—Chagrin silt loam					
Chagrin	95	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	1.00
		Restricted permeability	0.47	Depth to saturated zone	0.17
Ck—Chagrin silt loam, alkaline					
Chagrin	95	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	1.00
		Restricted permeability	0.47	Depth to saturated zone	0.17

Sewage Disposal (OH)–Summit County, Ohio					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (OH)		Sewage lagoons (OH)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Cm—Chagrin-Urban land complex					
Chagrin	70	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	1.00
		Restricted permeability	0.47	Depth to saturated zone	0.17
Urban land	30	Not rated		Not rated	
CnB—Chili loam, 2 to 6 percent slopes					
Chili	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.34
CnC—Chili loam, 6 to 12 percent slopes					
Chili	95	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
CoD2—Chili gravelly loam, 12 to 18 percent slopes, moderately eroded					
Chili	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
CpC—Chili silt loam, 6 to 12 percent slopes					
Chili	95	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
CrF—Cardinal-Mentor silt loams, 25 to 75 percent slopes					
Cardinal	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
Mentor	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.95	Seepage	0.05

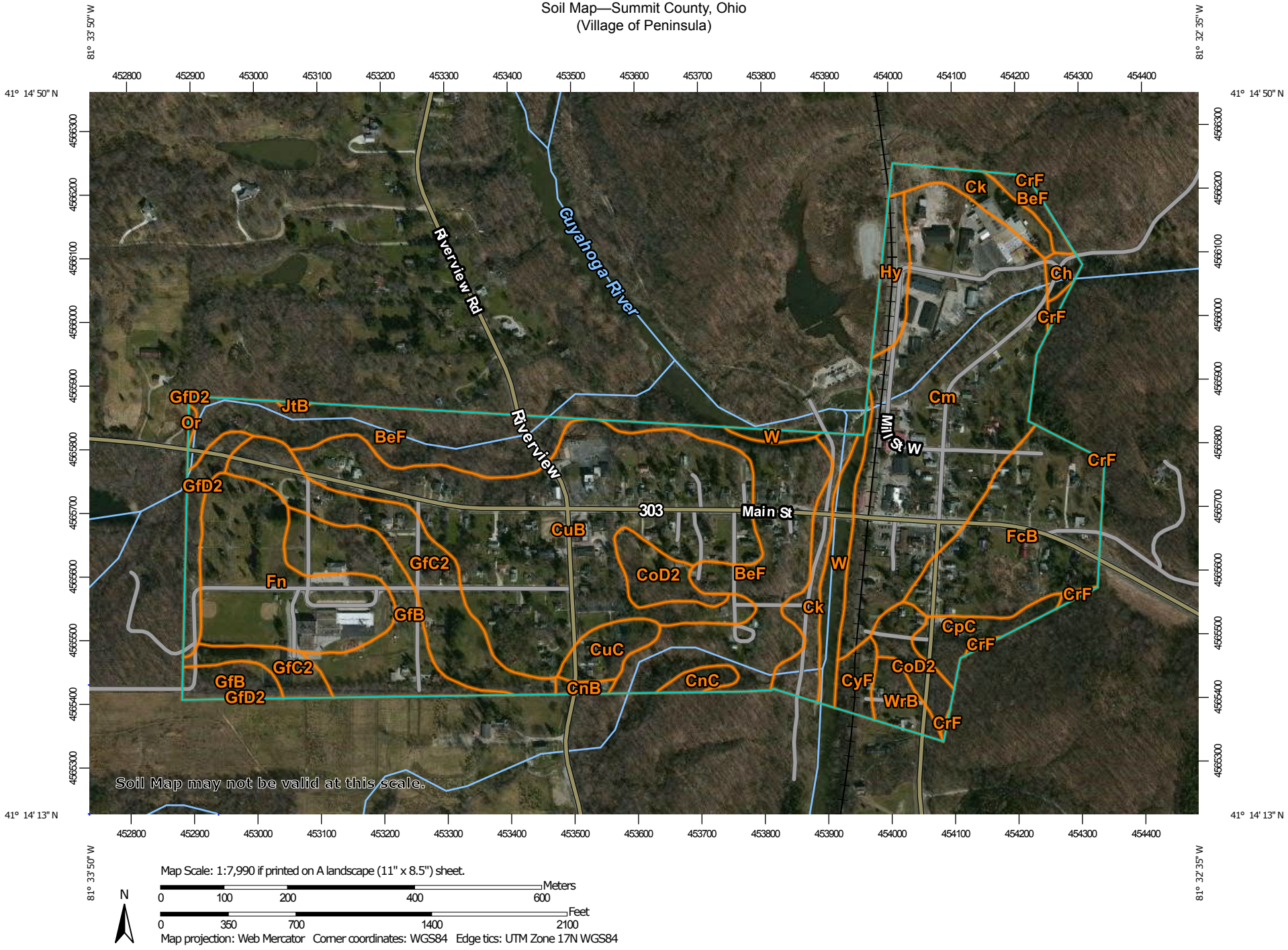
Sewage Disposal (OH)–Summit County, Ohio					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (OH)		Sewage lagoons (OH)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CuB—Chili-Urban land complex, undulating					
Chili	70	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.34
Urban land	30	Not rated		Not rated	
CuC—Chili-Urban land complex, rolling					
Chili	70	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
Urban land	30	Not rated		Not rated	
CyF—Conotton-Oshtemo complex, 25 to 50 percent slopes					
Conotton	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
Oshtemo	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
FcB—Fitchville silt loam, 2 to 6 percent slopes					
Fitchville	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	0.34
Fn—Fitchville-Urban land complex, 0 to 2 percent slopes					
Fitchville	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		
Urban land	35	Not rated		Not rated	
GfB—Glenford silt loam, 2 to 6 percent slopes					
Glenford	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	0.34
				Seepage	0.05

Sewage Disposal (OH)–Summit County, Ohio					
Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (OH)		Sewage lagoons (OH)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
GfC2—Glenford silt loam, 6 to 12 percent slopes, eroded					
Glenford, eroded	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04	Seepage	0.05
GfD2—Glenford silt loam, 12 to 18 percent slopes, eroded					
Glenford, eroded	95	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.05
Hy—Holly silt loam, alkaline					
Holly	95	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.53
JtB—Jimtown loam, 2 to 6 percent slopes					
Jimtown	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Slope	0.34
Or—Orrville silt loam					
Orrville	95	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.47	Seepage	0.53
W—Water					
Water	100	Not rated		Not rated	
WrB—Wheeling silt loam, 2 to 6 percent slopes					
Wheeling	95	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.47	Slope	0.34

Data Source Information

Soil Survey Area: Summit County, Ohio
Survey Area Data: Version 13, Sep 19, 2016

Soil Map—Summit County, Ohio
(Village of Peninsula)



Map Scale: 1:7,990 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit County, Ohio
Survey Area Data: Version 13, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 3, 2012—Mar 11, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Summit County, Ohio (OH153)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BeF	Berks channery silt loam, 25 to 70 percent slopes	26.4	14.8%
Ch	Chagrin silt loam	0.7	0.4%
Ck	Chagrin silt loam, alkaline	6.5	3.7%
Cm	Chagrin-Urban land complex	33.1	18.6%
CnB	Chili loam, 2 to 6 percent slopes	0.5	0.3%
CnC	Chili loam, 6 to 12 percent slopes	0.9	0.5%
CoD2	Chili gravelly loam, 12 to 18 percent slopes, moderately eroded	5.2	2.9%
CpC	Chili silt loam, 6 to 12 percent slopes	2.7	1.5%
CrF	Cardinal-Mentor silt loams, 25 to 75 percent slopes	0.6	0.3%
CuB	Chili-Urban land complex, undulating	36.0	20.2%
CuC	Chili-Urban land complex, rolling	2.4	1.3%
CyF	Conotton-Oshtemo complex, 25 to 50 percent slopes	1.5	0.9%
FcB	Fitchville silt loam, 2 to 6 percent slopes	14.3	8.0%
Fn	Fitchville-Urban land complex, 0 to 2 percent slopes	13.3	7.5%
GfB	Glenford silt loam, 2 to 6 percent slopes	10.7	6.0%
GfC2	Glenford silt loam, 6 to 12 percent slopes, eroded	12.4	7.0%
GfD2	Glenford silt loam, 12 to 18 percent slopes, eroded	2.6	1.5%
Hy	Holly silt loam, alkaline	2.4	1.3%
JtB	Jimtown loam, 2 to 6 percent slopes	0.1	0.1%
Or	Orrville silt loam	0.1	0.1%
W	Water	3.9	2.2%
WrB	Wheeling silt loam, 2 to 6 percent slopes	2.0	1.1%
Totals for Area of Interest		**178.2**	**100.0%**

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:
Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
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Federal Register. July 13, 1994. Changes in hydric soils of the United States.
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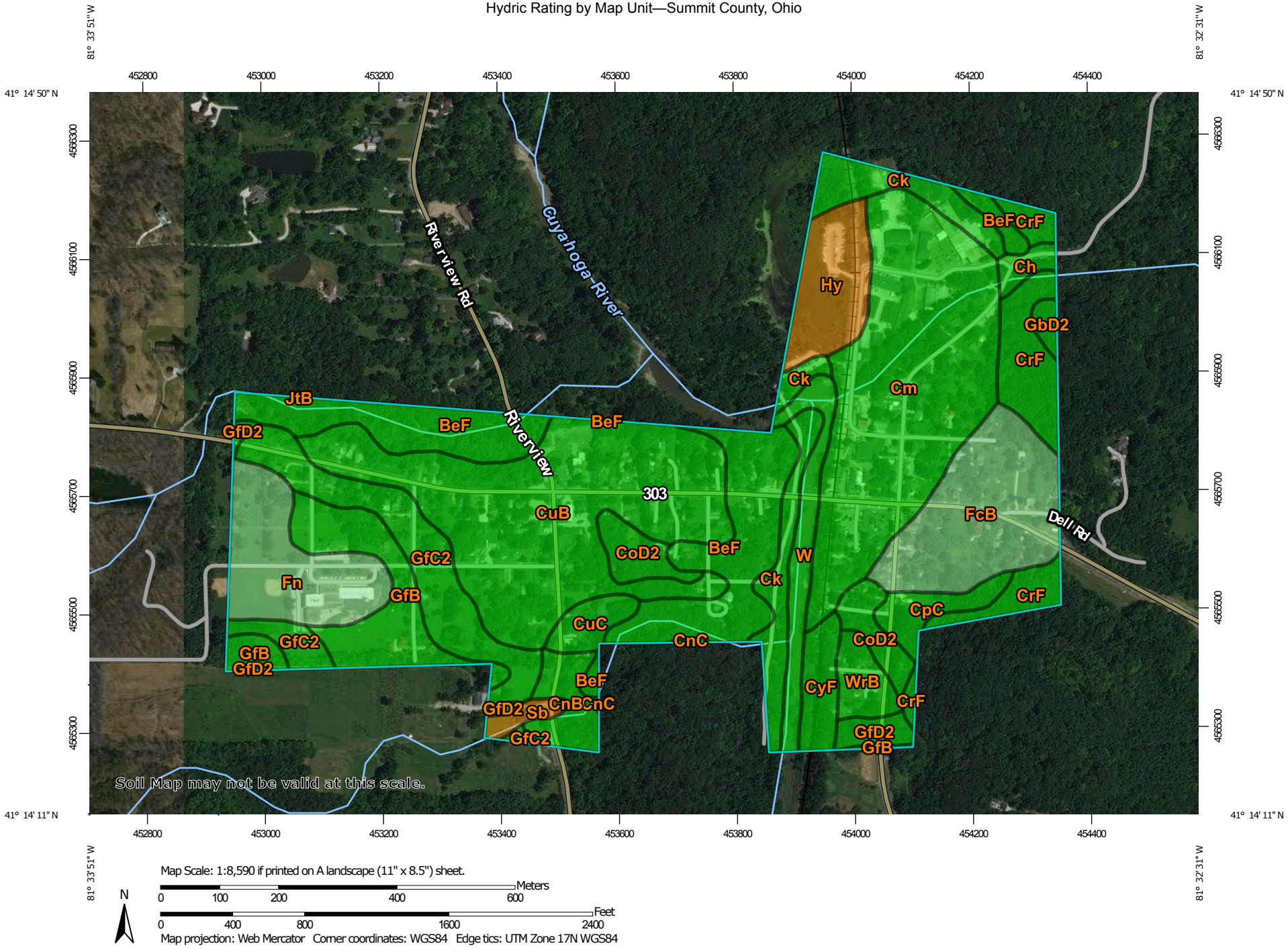
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

Report—Hydric Soils

Hydric Soils–Summit County, Ohio				
Map symbol and map unit name	**Component**	**Percent of map unit**	**Landform**	**Hydric criteria**
FcB—Fitchville silt loam, 2 to 6 percent slopes				
	Sebring	10	Terraces	2
Fn—Fitchville-Urban land complex, 0 to 2 percent slopes				
	Sebring	5	Terraces	2
Hy—Holly silt loam, alkaline				
	Holly	95	Flood plains	2, 4
Sb—Sebring silt loam, 0 to 2 percent slopes				
	Sebring	85	Terraces	2
	Luray	7	Terraces	2, 3

Data Source Information

Soil Survey Area: Summit County, Ohio
Survey Area Data: Version 13, Sep 19, 2016



Map Scale: 1:8,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit County, Ohio
Survey Area Data: Version 13, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 24, 2015—Mar 21, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Summit County, Ohio (OH153)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BeF	Berks channery silt loam, 25 to 70 percent slopes	0	22.2	11.1%
Ch	Chagrin silt loam	0	1.3	0.6%
Ck	Chagrin silt loam, alkaline	0	10.0	5.0%
Cm	Chagrin-Urban land complex	0	33.8	16.9%
CnB	Chili loam, 2 to 6 percent slopes	0	3.5	1.8%
CnC	Chili loam, 6 to 12 percent slopes	0	0.1	0.1%
CoD2	Chili gravelly loam, 12 to 18 percent slopes, moderately eroded	0	5.2	2.6%
CpC	Chili silt loam, 6 to 12 percent slopes	0	3.0	1.5%
CrF	Cardinal-Mentor silt loams, 25 to 75 percent slopes	0	9.3	4.7%
CuB	Chili-Urban land complex, undulating	0	35.6	17.8%
CuC	Chili-Urban land complex, rolling	0	2.4	1.2%
CyF	Conotton-Oshtemo complex, 25 to 50 percent slopes	0	3.3	1.6%
FcB	Fitchville silt loam, 2 to 6 percent slopes	10	15.5	7.7%
Fn	Fitchville-Urban land complex, 0 to 2 percent slopes	5	11.4	5.7%
GbD2	Geeburg silt loam, 12 to 18 percent slopes, moderately eroded	0	0.8	0.4%
GfB	Glenford silt loam, 2 to 6 percent slopes	0	10.3	5.2%
GfC2	Glenford silt loam, 6 to 12 percent slopes, eroded	0	13.2	6.6%
GfD2	Glenford silt loam, 12 to 18 percent slopes, eroded	0	2.3	1.2%
Hy	Holly silt loam, alkaline	95	7.2	3.6%

Hydric Rating by Map Unit— Summary by Map Unit — Summit County, Ohio (OH153)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
JtB	Jimtown loam, 2 to 6 percent slopes	0	0.0	0.0%
Sb	Sebring silt loam, 0 to 2 percent slopes	92	1.2	0.6%
W	Water	0	5.4	2.7%
WrB	Wheeling silt loam, 2 to 6 percent slopes	0	2.8	1.4%
Totals for Area of Interest			**199.8**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

III. APPENDIX C – COST ESTIMATES

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 1
Gravity Collection System w/ ConventionalExtended Aeration

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	12,950	L.F.	$70.00	$906,500.00
	8"x6" Wye	152	EACH	$155.43	$23,625.00
	2" Force Main	765	L.F.	$26.00	$19,890.00
	4" Force Main	3,000	L.F.	$35.00	$105,000.00
	6" Sanitary Sewer Service	6,750	EACH	$60.00	$405,000.00
	Manholes	42	EACH	$4,000.00	$168,000.00
	Grinder Pump Station	1	EACH	$70,000.00	$70,000.00
	Lift Station	1	EACH	$125,000.00	$125,000.00
	WWTP	1	Lump Sum	$900,000.00	$900,000.00
	8" WWTP Outfall	350	L.F.	$70.00	$24,500.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	883	C.Y.	$200.00	$176,600.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	17,986	C.Y.	$25.00	$449,650.00
	2" Asphalt Concrete	295	C.Y.	$350.00	$103,250.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	250	L.F.	$25.00	$6,250.00
603	8-12" Storm Sewer Replacement	1250	L.F.	$30.00	$37,500.00
606	Sidewalk Replacement	4,000	S.F.	$6.00	$24,000.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	7,300	S.Y.	$2.00	$14,600.00
659	Fertilizer	0.7	Ton	$750.00	$525.00
	SubTotal Construction				$3,666,390.00
	Contingencies	10.0%			$370,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Preliminary Engineering	1.5%			$55,000.00
	Design Engineering/Contract Administration	7.37%			$270,000.00
	Inspection Engineering	4.37%			$160,000.00
	Additional Engineering	2.5%			$92,000.00
	Legal				$5,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$146,655.60
	Total Project Cost				**$4,815,045.60**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 2
Pressure Collection System w/ Conventional Extended Aeration WWTP

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	0	L.F.	$70.00	$0.00
	Individual Grinder Pumps	130	EACH	$8,692.30	$1,130,000.00
	Business Grinder Pump	20	EACH	$12,000.00	$240,000.00
	Industrial Grinder Pump	2	EACH	$15,000.00	$30,000.00
	2" Force Main	12,950	L.F.	$26.00	$336,700.00
	4" Force Main	0	L.F.	$33.00	$0.00
	2" Force Main Sewer Service	6,750	EACH	$26.00	$175,500.00
	Manholes	0	EACH	$4,000.00	$0.00
	Grinder Pump Station	0	EACH	$70,000.00	$0.00
	Lift Station	0	EACH	$125,000.00	$0.00
	WWTP	1	Lump Sum	$900,000.00	$900,000.00
	8" WWTP Outfall	350	L.F.	$70.00	$24,500.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	530	C.Y.	$200.00	$106,000.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	5,036	C.Y.	$25.00	$125,900.00
	2" Asphalt Concrete	180	C.Y.	$350.00	$63,000.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	50	L.F.	$25.00	$1,250.00
603	8-12" Storm Sewer Replacement	250	L.F.	$30.00	$7,500.00
606	Sidewalk Replacement	4,000	S.F.	$7.50	$30,000.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	7,300	S.Y.	$2.00	$14,600.00
659	Fertilizer	0.7	Ton	$750.00	$525.00
	SubTotal Construction				$3,291,975.00
	Contingencies	10.0%			$330,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Preliminary Engineering	1.5%			$49,000.00
	Design Engineering/Contract Administration	7.33%			$241,000.00
	Inspection Engineering	4.10%			$135,000.00
	Additional Engineering	2.5%			$82,000.00
	Legal				$5,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$131,679.00
	Total Project Cost				**$4,315,654.00**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PPROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 3
Gravity Collection System to Regional Provider

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	12,950	L.F.	$70.00	$906,500.00
	8"x6" Wye	152	EACH	$155.43	$23,625.00
	2" Force Main	800	L.F.	$26.00	$20,800.00
	3" Force Main	13,700	L.F.	$32.50	$445,250.00
	6" Force Main - County Replacement	3,200	L.F.	$45.00	$144,000.00
	6" Sanitary Sewer Service	6,750	EACH	$60.00	$405,000.00
	Manholes	42	EACH	$4,000.00	$168,000.00
	Grinder Pump Station	1	EACH	$70,000.00	$70,000.00
	Lift Station w/ Aeration and Generator	3	EACH	$165,000.00	$495,000.00
	Replace Existing County Lift Station	1	EACH	$165,000.00	$165,000.00
	WWTP	0	Lump Sum	$0.00	$0.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	950	C.Y.	$200.00	$190,000.00
	6" Bituminous Agg. Base, Driveways	25	C.Y.	$200.00	$5,000.00
	Compacted Granular Backfill	18,000	C.Y.	$25.00	$450,000.00
	2" Asphalt Concrete	305	C.Y.	$350.00	$106,750.00
	2" Asphalt Concrete- Driveways	10	C.Y.	$350.00	$3,500.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	420	S.Y.	$90.00	$37,800.00
603	6" & Smaller Storm Sewer Replacement	250	L.F.	$25.00	$6,250.00
603	8-12" Storm Sewer Replacement	1300	L.F.	$30.00	$39,000.00
606	Sidewalk Replacement	4,100	S.F.	$7.50	$30,750.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	22,300	S.Y.	$2.00	$44,600.00
659	Fertilizer	2.0	Ton	$750.00	$1,500.00
	SubTotal Construction				$3,823,325.00
	Contingencies	10.0%			$380,000.00
	Land Acquisition	Lump	Sum		$0.00
	Tap Fee	Lump	Sum		$50,000.00
	Preliminary Engineering	1.5%			$57,000.00
	Design Engineering/Contract Administration	7.38%			$282,000.00
	Inspection Engineering	4.48%			$171,000.00
	Additional Engineering	2.5%			$96,000.00
	Legal				$10,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$152,933.00
	Total Project Cost				**$5,022,258.00**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 4
Pressure Collection System to Regional WWTP

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	0	L.F.	$70.00	$0.00
	Individual Grinder Pumps	130	EACH	$8,692.30	$1,130,000.00
	Business Grinder Pump	20	EACH	$12,000.00	$240,000.00
	Industrial Grinder Pump	2	EACH	$15,000.00	$30,000.00
	2" Force Main	12,950	L.F.	$26.00	$336,700.00
	3" Force Main	13,700	L.F.	$35.00	$479,500.00
	6" Force Main - County Replacement	3,200	L.F.	$45.00	$144,000.00
	2" Force Main Sewer Service	5,500	EACH	$26.00	$143,000.00
	Manholes	0	EACH	$4,000.00	$0.00
	Grinder Pump Station	0	EACH	$70,000.00	$0.00
	Lift Station w/ Aeration and Generator	3	EACH	$165,000.00	$495,000.00
	Replace Existing County Lift Station	1	EACH	$165,000.00	$165,000.00
	WWTP	0	Lump Sum	$0.00	$0.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	430	C.Y.	$200.00	$86,000.00
	6" Bituminous Agg. Base, Driveways	72	C.Y.	$200.00	$14,400.00
	Compacted Granular Backfill	18,000	C.Y.	$25.00	$450,000.00
	2" Asphalt Concrete	305	C.Y.	$350.00	$106,750.00
	2" Asphalt Concrete- Driveways	10	C.Y.	$350.00	$3,500.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	420	S.Y.	$90.00	$37,800.00
603	6" & Smaller Storm Sewer Replacement	50	L.F.	$25.00	$1,250.00
603	8-12" Storm Sewer Replacement	300	L.F.	$30.00	$9,000.00
606	Sidewalk Replacement	350	S.F.	$7.50	$2,625.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	22,300	S.Y.	$2.00	$44,600.00
659	Fertilizer	2.0	Ton	$750.00	$1,500.00
	SubTotal Construction				$3,985,625.00
	Contingencies	10.0%			$400,000.00
	Land Acquisition	Lump	Sum		$0.00
	Preliminary Engineering	1.5%			$60,000.00
	Design Engineering/Contract Administration	7.40%			$295,000.00
	Inspection Engineering	4.59%			$183,000.00
	Additional Engineering	2.5%			$100,000.00
	Legal				$5,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$159,425.00
	Total Project Cost				**$5,188,050.00**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 5
Gravity Collection to MBR WWTP

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	12,950	L.F.	$70.00	$906,500.00
	8"x6" Wye	152	EACH	$155.43	$23,625.00
	2" Force Main	765	L.F.	$26.00	$19,890.00
	4" Force Main	3,000	L.F.	$35.00	$105,000.00
	6" Sanitary Sewer Service	6,750	EACH	$60.00	$405,000.00
	Manholes	42	EACH	$4,000.00	$168,000.00
	Grinder Pump Station	1	EACH	$70,000.00	$70,000.00
	Lift Station	1	EACH	$125,000.00	$125,000.00
	MBR WWTP	1	Lump Sum	$1,577,000.00	$1,577,000.00
	8" WWTP Outfall	350	L.F.	$70.00	$24,500.00
201	Clearing & Grubbing	1	Lump Sum	$10,000.00	$10,000.00
	6" Bituminous Agg. Base, Roads	883	C.Y.	$200.00	$176,600.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	17,986	C.Y.	$25.00	$449,650.00
	2" Asphalt Concrete	295	C.Y.	$350.00	$103,250.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	250	L.F.	$25.00	$6,250.00
603	8-12" Storm Sewer Replacement	1250	L.F.	$30.00	$37,500.00
606	Sidewalk Replacement	4,000	S.F.	$6.00	$24,000.00
614	Traffic Control	1	Lump Sum	$10,000.00	$10,000.00
659	Seeding & Mulching	7,300	S.Y.	$1.50	$10,950.00
659	Fertilizer	0.7	Ton	$500.00	$350.00
	SubTotal Construction				$4,324,565.00
	Contingencies	10.0%			$430,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Tap Fee	Lump	Sum		$0.00
	Preliminary Engineering	1.5%			$65,000.00
	Design Engineering/Contract Administration	7.23%			$313,000.00
	Inspection Engineering	3.63%			$157,000.00
	Additional Engineering	2.5%			$108,000.00
	Legal				$5,288.08
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$172,982.60
	Total Project Cost				**$5,625,835.68**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 6
STEP Collection System with Cluster RMF WTTP's

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	1.25" PVC Line	0	L.F.	$25.00	$0.00
	Individual STEP Pump	130	EACH	$869.23	$113,000.00
	Individual Septic Tank	130	EACH	$5,215.38	$678,000.00
	Business STEP Pump	20	EACH	$1,500.00	$30,000.00
	Business Septic Tank	20	EACH	$8,000.00	$160,000.00
	Industrial STEP Pump	2	EACH	$2,500.00	$5,000.00
	Industrial Septic Tank	2	EACH	$10,000.00	$20,000.00
	2" Force Main	12,950	L.F.	$26.00	$336,700.00
	4" Force Main	0	L.F.	$35.00	$0.00
	1.25" Service Lines	6,750	EACH	$24.00	$162,000.00
	WWTP	2	Lump Sum	$991,897.00	$1,983,794.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	530	C.Y.	$200.00	$106,000.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	5,036	C.Y.	$25.00	$125,900.00
	2" Asphalt Concrete	180	C.Y.	$350.00	$63,000.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	50	L.F.	$30.00	$1,500.00
603	8-12" Storm Sewer Replacement	250	L.F.	$40.00	$10,000.00
606	Sidewalk Replacement	4,000	S.F.	$7.50	$30,000.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	7,300	S.Y.	$2.00	$14,600.00
659	Fertilizer	0.7	Ton	$750.00	$525.00
	SubTotal Construction				$3,946,519.00
	Contingencies	10.0%			$390,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Preliminary Engineering	1.5%			$59,000.00
	Design Engineering/Contract Administration	7.39%			$292,000.00
	Inspection Engineering	4.56%			$180,000.00
	Additional Engineering	2.5%			$99,000.00
	Legal				$5,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$157,860.76
	Total Project Cost				**$5,179,379.76**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 7
Gravity Collection System w/ Living Machine WWTP

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	12,950	L.F.	$70.00	$906,500.00
	8"x6" Wye	152	EACH	$155.43	$23,625.00
	2" Force Main	3,765	L.F.	$26.00	$97,890.00
	4" Force Main	0	L.F.	$35.00	$0.00
	6" Sanitary Sewer Service	6,750	EACH	$60.00	$405,000.00
	Manholes	42	EACH	$4,000.00	$168,000.00
	Grinder Pump Station	2	EACH	$70,000.00	$140,000.00
	Lift Station	0	EACH	$125,000.00	$0.00
	Living Machine WWTP	1	Lump Sum	$2,000,000.00	$2,000,000.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	883	C.Y.	$200.00	$176,600.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	17,986	C.Y.	$25.00	$449,650.00
	2" Asphalt Concrete	295	C.Y.	$350.00	$103,250.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	250	L.F.	$25.00	$6,250.00
603	8-12" Storm Sewer Replacement	1250	L.F.	$30.00	$37,500.00
606	Sidewalk Replacement	4,000	S.F.	$7.50	$30,000.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	7,300	S.Y.	$2.00	$14,600.00
659	Fertilizer	0.7	Ton	$750.00	$525.00
	SubTotal Construction				$4,665,890.00
	Contingencies	10.0%			$470,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Tap Fee	Lump	Sum		$0.00
	Preliminary Engineering	1.5%			$70,000.00
	Design Engineering/Contract Administration	7.27%			$339,000.00
	Inspection Engineering	3.77%			$176,000.00
	Additional Engineering	2.5%			$117,000.00
	Legal				$10,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$186,635.60
	Total Project Cost				**$6,084,525.60**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

Stantec Consulting, Inc.
1311 West Hunter Street
Logan, Ohio 43138

JOB NO. 173409185

Preliminary ___X_____
Design _____
Construction _____

ENGINEER'S ESTIMATE

PROJECT: Village of Peninsula
Preliminary Engineering Report - Alternative 8
Gravity Collection System with Cluster RMF WTTP's

PREPARED BY: Robert A. Fuller, P.E.

REVIEWED BY: Gary D. Silcott, Jr. P.E

ITEM	DESCRIPTION	EST. QUAN	UNIT	UNIT PRICE	TOTAL
	8" Sanitary Sewer	12,950	L.F.	$70.00	$906,500.00
	8"x6" Wye	152	EACH	$155.43	$23,625.00
	2" Force Main	3,765	L.F.	$26.00	$97,890.00
	4" Force Main	0	L.F.	$35.00	$0.00
	6" Sanitary Sewer Service	6,750	EACH	$60.00	$405,000.00
	Manholes	42	EACH	$4,000.00	$168,000.00
	Grinder Pump Station	2	EACH	$70,000.00	$140,000.00
	Lift Station	0	EACH	$125,000.00	$0.00
	4" Force Main	0	L.F.	$35.00	$0.00
	1.25" Service Lines	6,750	EACH	$24.00	$162,000.00
	WWTP	2	Lump Sum	$1,165,312.00	$2,330,624.00
201	Clearing & Grubbing	1	Lump Sum	$20,000.00	$20,000.00
	6" Bituminous Agg. Base, Roads	530	C.Y.	$200.00	$106,000.00
	6" Bituminous Agg. Base, Driveways	17	C.Y.	$200.00	$3,400.00
	Compacted Granular Backfill	5,036	C.Y.	$25.00	$125,900.00
	2" Asphalt Concrete	180	C.Y.	$350.00	$63,000.00
	2" Asphalt Concrete- Driveways	6	C.Y.	$350.00	$2,100.00
	Curb Replacement	600	L.F.	$50.00	$30,000.00
	6" Non-Reinforced Concrete	400	S.Y.	$90.00	$36,000.00
603	6" & Smaller Storm Sewer Replacement	50	L.F.	$30.00	$1,500.00
603	8-12" Storm Sewer Replacement	250	L.F.	$40.00	$10,000.00
606	Sidewalk Replacement	4,000	S.F.	$7.50	$30,000.00
614	Traffic Control	1	Lump Sum	$15,000.00	$15,000.00
659	Seeding & Mulching	7,300	S.Y.	$2.00	$14,600.00
659	Fertilizer	0.7	Ton	$750.00	$525.00
	SubTotal Construction				$4,691,664.00
	Contingencies	10.0%			$470,000.00
	Land Acquisition	Lump	Sum		$50,000.00
	Preliminary Engineering	1.5%			$70,000.00
	Design Engineering/Contract Administration	7.27%			$341,000.00
	Inspection Engineering	3.78%			$177,000.00
	Additional Engineering	2.5%			$117,000.00
	Legal				$5,000.00
	CDBG Administration				$0.00
	Capitalized Interest	4.0%	1 year		$187,666.56
	Total Project Cost				**$6,109,330.56**

Since the Engineer has no control over the cost of labor, materials, or equipment; over the Contractor's method of determining prices; or over competitive bidding or market conditions; the estimate of construction cost herein is made on the basis of his best judgment as a design professional familiar with the construction industry. The Engineer cannot, and does not, guarantee that bids of the project construction cost will not vary from this cost estimate.

IV. APPENDIX D – O&M COSTS

O & M COSTS

Project Name: Village of Peninsula PER

Project Alternative(s):	Salaries & Administrative Costs 2017	Salaries & Administrative Costs 2037	Power Costs 2017	Power Costs 2037	Chemical Costs 2017	Chemical Costs 2037	Repair & Maintenance Costs 2017	Repair & Maintenance Costs 2037	Total 2017	Total 2037
Alt 1 : Gravity Collection System w/ WWTP	$ 23,130	$ 23,130	$ 9,120	$ 9,120	$ 8,400	$ 8,400	$ 2,700	$ 2,700	$ 43,350	$ 43,350
Alt 2: Pressure Collection w/ WWTP	32,000	32,000	9,120	9,120	8,400	8,400	34,500	34,500	$ 84,020	$ 84,020
Alt 3: Gravity Collection System to Regional WWTP	10,092	10,092	3,840	3,840	1,200	1,200	1,920	1,920	$ 17,052	$ 17,052
Alt 4: Pressure Collection to Regional WWTP	18,000	18,000	3,840	3,840	1,200	1,200	31,750	31,750	$ 54,790	$ 54,790
Alt 5: Gravity Collection w/ MBR WWTP	23,130	23,130	20,320	20,320	8,400	8,400	3,000	3,000	$ 54,850	$ 54,850
Alt 6: STEP Collection System w/ Cluster WWTPs	28,000	28,000	9,840	9,840	8,400	8,400	25,365	25,365	$ 71,605	$ 71,605
Alt 7: Gravity Collection w/ Living Machine WWTP	23,130	23,130	9,120	9,120	8,400	8,400	2,700	2,700	$ 43,350	$ 43,350
Alt 8: Gravity Collection w/ Cluster WWTPs	23,130	23,130	9,120	9,120	8,400	8,400	15,240	15,240	$ 55,890	$ 55,890

V. APPENDIX E – PRESENT WORTH VALUES

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 1 : Gravity Collection System w/ WWTP**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees		$ -	
Service Fees		$ -	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			
Structures Value, year 0:		$3,299,751	90.0%
Process Equipment			
	20 yr. Equipment Value, year 0:	$183,320	5.0%
	15 yr. Equipment Value, year 0:	$109,992	3.0%
Auxillary Equipment			
	15 yr. Equipment Value, year 0:	$54,996	1.5%
	10 yr. Equipment Value, year 0:	$18,332	0.5%
			100%
Land Cost:		$ 50,000	
Total Construction Cost:		$ 3,666,390	
Contingences:		$ 370,000	
Technical Services:		$ 728,656	
Salaries & Administrative Costs			
year	2017	$ 23,130	
year	2037	$ 23,130	
Power Costs			
year	2017	$ 9,120	
year	2037	$ 9,120	
Testing Services & Chemicals			
year	2017	$ 8,400	
year	2037	$ 8,400	
Repair & Maintenance Costs			
year	2017	$ 2,700	
year	2037	$ 2,700	

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 1 : Gravity Collection System w/ WWTP**

0	2017		2037
Salaries and Administrative	$ 23,130		$ 23,130
Power	$ 9,120		$ 9,120
Chemicals & Laboratory	$ 8,400		$ 8,400
Repair & Maintenance	$ 2,700		$ 2,700
TOTAL O&M COSTS	$ 43,350		$ 43,350
TOTAL FIXED O&M	$ 43,350		$ 43,350
TOTAL VARIABLE 0&M	$ -		$ -
YEARLY INCREASE		$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 1 : Gravity Collection System w/ WWTP**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Tanks / Piping)				
50 yr life	$ 3,299,751			
Salvage Value				$ 1,979,851
Process Equipment (WTP)				
20 yr life	$ 183,320			
15 yr life	$ 109,992			
Replacement Cost			$ 109,992	
Salvage Value				$ 73,328
Auxiliary Equipment				
15 yr life	$ 54,996			
10 yr life	$ 18,332			
Replacement Cost		$ 18,332	$ 54,996	$ 36,664
Salvage Value				
Other Costs				
Contingencies	$ 370,000			
Technical Services	$ 728,656			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 4,815,046			
TOTAL REPLACEMENT COST		$ 18,332	$ 164,988	
TOTAL SALVAGE VALUE				$ 2,139,842

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 1 : Gravity Collection System w/ WWTP**
0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 4,815,046			
Replacement Cost at Year 10:		$ 18,332		
Replacement Cost at Year 15:		$ 164,988		
Salvage Value at Year 20:				
Structures		$ 1,979,851		
Process Equipment		$ 73,328		
Auxiliary Equipment		$ 36,664		
Land		$ 50,000		
Total		$ 2,139,842		
Constant Annual Operation & Maintenance Cost:			$ 43,350	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 4,815,046
Constant O&M	$ 823,105
Variable O&M	$ -
Replacement Cost	$ 170,535
Salvage Value (minus)	$ (1,936,692)
Interest During Construction	$ 12,038
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 3,884,031

AVERAGE EQUIVALENT ANNUAL COST **$ 204,558**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:		Construction Period(yrs):	1

Alt 2: Pressure Collection w/ WWTP

Real Interest Rate%: 0.50%

Tap Fees	$	-	
Service Fees	$	-	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			

Structures Value, year 0:	$2,962,778	90.0%
Process Equipment		
20 yr. Equipment Value, year 0:	$164,599	5.0%
15 yr. Equipment Value, year 0:	$98,759	3.0%
Auxillary Equipment		
15 yr. Equipment Value, year 0:	$49,380	1.5%
10 yr. Equipment Value, year 0:	$16,460	0.5%
		100%

Land Cost:		$	50,000
Total Construction Cost:		$	3,291,975
Contingences:		$	330,000
Technical Services:		$	643,679
Salaries & Administrative Costs			
year	2017	$	32,000
year	2037	$	32,000
Power Costs			
year	2017	$	9,120
year	2037	$	9,120
Sampling Costs			
year	2017	$	8,400
year	2037	$	8,400
Repair & Maintenance Costs			
year	2017	$	34,500
year	2037	$	34,500

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 2: Pressure Collection w/ WWTP**

	0	2017		2037
Salaries and Administrative		$ 32,000		$ 32,000
Power		$ 9,120		$ 9,120
Chemicals & Laboratory		$ 8,400		$ 8,400
Repair & Maintenance		$ 34,500		$ 34,500
TOTAL O&M COSTS		$ 84,020		$ 84,020
TOTAL FIXED O&M		$ 84,020		$ 84,020
TOTAL VARIABLE 0&M		$ -		$ -
YEARLY INCREASE			$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 2: Pressure Collection w/ WWTP**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 2,962,778			
Salvage Value				$ 1,777,667
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 164,599			
15 yr life	$ 98,759			
Replacement Cost			$ 98,759	
Salvage Value				$ 65,840
Auxiliary Equipment				
15 yr life	$ 49,380			
10 yr life	$ 16,460			
Replacement Cost		$ 16,460	$ 49,380	$ 32,920
Salvage Value				
Other Costs				
Contingencies	$ 330,000			
Technical Services	$ 643,679			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 4,315,654			
TOTAL REPLACEMENT COST		$ 16,460	$ 148,139	
TOTAL SALVAGE VALUE				$ 1,926,426

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 2: Pressure Collection w/ WWTP**
0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 4,315,654			
Replacement Cost at Year 10:		$ 16,460		
Replacement Cost at Year 15:		$ 148,139		
Salvage Value at Year 20:				
Structures		$ 1,777,667		
Process Equipment		$ 65,840		
Auxiliary Equipment		$ 32,920		
Land		$ 50,000		
Total		$ 1,926,426		
Constant Annual Operation & Maintenance Cost:			$ 84,020	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 4,315,654
Constant O&M	$ 1,595,323
Variable O&M	$ -
Replacement Cost	$ 153,120
Salvage Value (minus)	$ (1,743,536)
Interest During Construction	$ 10,789
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 4,331,349

AVERAGE EQUIVALENT ANNUAL COST **$ 228,117**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 3: Gravity Collection System to Regional WWTP**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees		$ -	
Service Fees		$ 90,720.00	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			
Structures Value, year 0:		$3,440,993	90.0%
Process Equipment			
	20 yr. Equipment Value, year 0:	$191,166	5.0%
	15 yr. Equipment Value, year 0:	$114,700	3.0%
Auxillary Equipment			
	15 yr. Equipment Value, year 0:	$57,350	1.5%
	10 yr. Equipment Value, year 0:	$19,117	0.5%
			100%
Land Cost:		$ -	
Total Construction Cost:		$ 3,823,325	
Contingences:		$ 380,000	
Technical Services:		$ 818,933	
Salaries & Administrative Costs			
year	2017	$ 10,092	
year	2037	$ 10,092	
Power Costs			
year	2017	$ 3,840	
year	2037	$ 3,840	
Sampling Costs			
year	2017	$ 1,200	
year	2037	$ 1,200	
Repair & Maintenance Costs			
year	2017	$ 1,920	
year	2037	$ 1,920	

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 3: Gravity Collection System to Regional WWTP**

	0	2017		2037
Salaries and Administrative		$ 10,092		$ 10,092
Power		$ 3,840		$ 3,840
Chemicals & Laboratory		$ 1,200		$ 1,200
Repair & Maintenance		$ 1,920		$ 1,920
TOTAL O&M COSTS		$ 17,052		$ 17,052
TOTAL FIXED O&M		$ 17,052		$ 17,052
TOTAL VARIABLE 0&M		$ -		$ -
YEARLY INCREASE			$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 3: Gravity Collection System to Regional WWTP**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 3,440,993			
Salvage Value				$ 2,064,596
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 191,166			
15 yr life	$ 114,700			
Replacement Cost			$ 114,700	
Salvage Value				$ 76,467
Auxiliary Equipment				
15 yr life	$ 57,350			
10 yr life	$ 19,117			
Replacement Cost		$ 19,117	$ 57,350	$ 38,233
Salvage Value				
Other Costs				
Contingencies	$ 380,000			
Technical Services	$ 818,933			
Land	$ -			$ -
TOTAL PROJECT COST	$ 5,022,258			
TOTAL REPLACEMENT COST		$ 19,117	$ 172,050	
TOTAL SALVAGE VALUE				$ 2,179,295

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 3: Gravity Collection System to Regional WWTP**

0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 5,022,258			
Replacement Cost at Year 10:		$ 19,117		
Replacement Cost at Year 15:		$ 172,050		
Salvage Value at Year 20:				
Structures		$ 2,064,596		
Process Equipment		$ 76,467		
Auxiliary Equipment		$ 38,233		
Land		$ -		
Total		$ 2,179,295		
Constant Annual Operation & Maintenance Cost:			$ 17,052	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %	
Present Worth (PW) of Constant annual O&M cost(P/A):			18.98741915
PW of variable annual O&M cost (annual increase)(P/G):			177.2322123
Present Worth of Replacement Cost - Year 10(P/F):			0.951347941
Present Worth of Replacement Cost - Year 15:			0.927916877
Present Worth of salvage value:			0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 5,022,258
Constant O&M	$ 323,773
Variable O&M	$ -
Replacement Cost	$ 177,834
Salvage Value (minus)	$ (1,972,399)
Interest During Construction	$ 12,556
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ 2,085,809
Total Present Worth	$ 5,649,831

AVERAGE EQUIVALENT ANNUAL COST **$ 297,557**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 4: Pressure Collection to Regional WWTP**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees	$	-	
Service Fees	$	90,720.00	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			

Structures Value, year 0:	$3,587,063	90.0%
Process Equipment		
20 yr. Equipment Value, year 0:	$199,281	5.0%
15 yr. Equipment Value, year 0:	$119,569	3.0%
Auxillary Equipment		
15 yr. Equipment Value, year 0:	$59,784	1.5%
10 yr. Equipment Value, year 0:	$19,928	0.5%
		100%

Land Cost:		$	-
Total Construction Cost:		$	3,985,625
Contingences:		$	400,000
Technical Services:		$	802,425
Salaries & Administrative Costs			
year	2017	$	18,000
year	2037	$	18,000
Power Costs			
year	2017	$	3,840
year	2037	$	3,840
Sampling Costs			
year	2017	$	1,200
year	2037	$	1,200
Repair & Maintenance Costs			
year	2017	$	31,750
year	2037	$	31,750

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 4: Pressure Collection to Regional WWTP**

	0	2017		2037
Salaries and Administrative		$ 18,000		$ 18,000
Power		$ 3,840		$ 3,840
Chemicals & Laboratory		$ 1,200		$ 1,200
Repair & Maintenance		$ 31,750		$ 31,750
TOTAL O&M COSTS		$ 54,790		$ 54,790
TOTAL FIXED O&M		$ 54,790		$ 54,790
TOTAL VARIABLE 0&M		$ -		$ -
YEARLY INCREASE			$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 4: Pressure Collection to Regional WWTP**

	0 Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 3,587,063			
Salvage Value				$ 2,152,238
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 199,281			
15 yr life	$ 119,569			
Replacement Cost			$ 119,569	
Salvage Value				$ 79,713
Auxiliary Equipment				
15 yr life	$ 59,784			
10 yr life	$ 19,928			
Replacement Cost		$ 19,928	$ 59,784	$ 39,856
Salvage Value				
Other Costs				
Contingencies	$ 400,000			
Technical Services	$ 802,425			
Land	$ -			$ -
TOTAL PROJECT COST	$ 5,188,050			
TOTAL REPLACEMENT COST		$ 19,928	$ 179,353	
TOTAL SALVAGE VALUE				$ 2,271,806

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 4: Pressure Collection to Regional WWTP**

0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 5,188,050			
Replacement Cost at Year 10:		$ 19,928		
Replacement Cost at Year 15:		$ 179,353		
Salvage Value at Year 20:				
Structures		$ 2,152,238		
Process Equipment		$ 79,713		
Auxiliary Equipment		$ 39,856		
Land		$ -		
Total		$ 2,271,806		
Constant Annual Operation & Maintenance Cost:			$ 54,790	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %	
Present Worth (PW) of Constant annual O&M cost(P/A):			18.98741915
PW of variable annual O&M cost (annual increase)(P/G):			177.2322123
Present Worth of Replacement Cost - Year 10(P/F):			0.951347941
Present Worth of Replacement Cost - Year 15:			0.927916877
Present Worth of salvage value:			0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 5,188,050
Constant O&M	$ 1,040,321
Variable O&M	$ -
Replacement Cost	$ 185,383
Salvage Value (minus)	$ (2,056,128)
Interest During Construction	$ 12,970
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ 2,085,809
Total Present Worth	$ 6,456,406

AVERAGE EQUIVALENT ANNUAL COST **$ 340,036**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 5: Gravity Collection w/ MBR WWTP**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees		$ -	
Service Fees		$ -	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			
Structures Value, year 0:		$3,892,109	90.0%
Process Equipment			
	20 yr. Equipment Value, year 0:	$216,228	5.0%
	15 yr. Equipment Value, year 0:	$129,737	3.0%
Auxillary Equipment			
	15 yr. Equipment Value, year 0:	$64,868	1.5%
	10 yr. Equipment Value, year 0:	$21,623	0.5%
			100%
Land Cost:		$ 50,000	
Total Construction Cost:		$ 4,324,565	
Contingences:		$ 430,000	
Technical Services:		$ 821,271	
Salaries & Administrative Costs			
year	2017	$ 23,130	
year	2037	$ 23,130	
Power Costs			
year	2017	$ 20,320	
year	2037	$ 20,320	
Sampling Costs			
year	2017	$ 8,400	
year	2037	$ 8,400	
Repair & Maintenance Costs			
year	2017	$ 3,000	
year	2037	$ 3,000	

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 5: Gravity Collection w/ MBR WWTP**

0	2017		2037
Salaries and Administrative	$ 23,130		$ 23,130
Power	$ 20,320		$ 20,320
Chemicals & Laboratory	$ 8,400		$ 8,400
Repair & Maintenance	$ 3,000		$ 3,000
TOTAL O&M COSTS	$ 54,850		$ 54,850
TOTAL FIXED O&M	$ 54,850		$ 54,850
TOTAL VARIABLE 0&M	$ -		$ -
YEARLY INCREASE		$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 5: Gravity Collection w/ MBR WWTP**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 3,892,109			
Salvage Value				$ 2,335,265
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 216,228			
15 yr life	$ 129,737			
Replacement Cost			$ 129,737	
Salvage Value				$ 86,491
Auxiliary Equipment				
15 yr life	$ 64,868			
10 yr life	$ 21,623			
Replacement Cost		$ 21,623	$ 64,868	$ 43,246
Salvage Value				
Other Costs				
Contingencies	$ 430,000			
Technical Services	$ 821,271			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 5,625,836			
TOTAL REPLACEMENT COST		$ 21,623	$ 194,605	
TOTAL SALVAGE VALUE				$ 2,515,002

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 5: Gravity Collection w/ MBR WWTP**
0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 5,625,836			
Replacement Cost at Year 10:		$ 21,623		
Replacement Cost at Year 15:		$ 194,605		
Salvage Value at Year 20:				
Structures		$ 2,335,265		
Process Equipment		$ 86,491		
Auxiliary Equipment		$ 43,246		
Land		$ 50,000		
Total		$ 2,515,002		
Constant Annual Operation & Maintenance Cost:			$ 54,850	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 5,625,836
Constant O&M	$ 1,041,460
Variable O&M	$ -
Replacement Cost	$ 201,148
Salvage Value (minus)	$ (2,276,235)
Interest During Construction	$ 14,065
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 4,606,274

AVERAGE EQUIVALENT ANNUAL COST **$ 242,596**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 6: STEP Collection System w/ Cluster WWTPs**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees		$ -	
Service Fees		$ -	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			
Structures Value, year 0:		$3,157,215	80.0%
Process Equipment			
	20 yr. Equipment Value, year 0:	$197,326	5.0%
	15 yr. Equipment Value, year 0:	$355,187	9.0%
Auxillary Equipment			
	15 yr. Equipment Value, year 0:	$59,198	1.5%
	10 yr. Equipment Value, year 0:	$177,593	4.5%
			100%
Land Cost:		$ 50,000	
Total Construction Cost:		$ 3,946,519	
Contingences:		$ 390,000	
Technical Services:		$ 792,861	
Salaries & Administrative Costs			
year	2017	$ 28,000	
year	2037	$ 28,000	
Power Costs			
year	2017	$ 9,840	
year	2037	$ 9,840	
Sampling Costs			
year	2017	$ 8,400	
year	2037	$ 8,400	
Repair & Maintenance Costs			
year	2017	$ 25,365	
year	2037	$ 25,365	

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 6: STEP Collection System w/ Cluster WWTPs**

0	2017		2037
Salaries and Administrative	$ 28,000		$ 28,000
Power	$ 9,840		$ 9,840
Chemicals & Laboratory	$ 8,400		$ 8,400
Repair & Maintenance	$ 25,365		$ 25,365
TOTAL O&M COSTS	$ 71,605		$ 71,605
TOTAL FIXED O&M	$ 71,605		$ 71,605
TOTAL VARIABLE 0&M	$ -		$ -
YEARLY INCREASE		$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 6: STEP Collection System w/ Cluster WWTPs**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 3,157,215			
Salvage Value				$ 1,894,329
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 197,326			
15 yr life	$ 355,187			
Replacement Cost			$ 355,187	
Salvage Value				$ 236,791
Auxiliary Equipment				
15 yr life	$ 59,198			
10 yr life	$ 177,593			
Replacement Cost		$ 177,593	$ 59,198	$ 39,465
Salvage Value				
Other Costs				
Contingencies	$ 390,000			
Technical Services	$ 792,861			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 5,179,380			
TOTAL REPLACEMENT COST		$ 177,593	$ 414,384	
TOTAL SALVAGE VALUE				$ 2,220,585

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 6: STEP Collection System w/ Cluster WWTPs**
0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 5,179,380			
Replacement Cost at Year 10:		$ 177,593		
Replacement Cost at Year 15:		$ 414,384		
Salvage Value at Year 20:				
Structures		$ 1,894,329		
Process Equipment		$ 236,791		
Auxiliary Equipment		$ 39,465		
Land		$ 50,000		
Total		$ 2,220,585		
Constant Annual Operation & Maintenance Cost:			$ 71,605	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 5,179,380
Constant O&M	$ 1,359,594
Variable O&M	$ -
Replacement Cost	$ 553,467
Salvage Value (minus)	$ (2,009,770)
Interest During Construction	$ 12,948
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 5,095,620

AVERAGE EQUIVALENT ANNUAL COST **$ 268,368**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 7: Gravity Collection w/ Living Machine WWTP**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees		$ -	
Service Fees		$ -	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			
Structures Value, year 0:		$4,199,301	90.0%
Process Equipment			
	20 yr. Equipment Value, year 0:	$233,295	5.0%
	15 yr. Equipment Value, year 0:	$139,977	3.0%
Auxillary Equipment			
	15 yr. Equipment Value, year 0:	$69,988	1.5%
	10 yr. Equipment Value, year 0:	$23,329	0.5%
			100%
Land Cost:		$ 50,000	
Total Construction Cost:		$ 4,665,890	
Contingences:		$ 470,000	
Technical Services:		$ 898,636	
Salaries & Administrative Costs			
year	2017	$ 23,130	
year	2037	$ 23,130	
Power Costs			
year	2017	$ 9,120	
year	2037	$ 9,120	
Sampling Costs			
year	2017	$ 8,400	
year	2037	$ 8,400	
Repair & Maintenance Costs			
year	2017	$ 2,700	
year	2037	$ 2,700	

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 7: Gravity Collection w/ Living Machine WWTP**

	0	2017		2037
Salaries and Administrative		$ 23,130		$ 23,130
Power		$ 9,120		$ 9,120
Chemicals & Laboratory		$ 8,400		$ 8,400
Repair & Maintenance		$ 2,700		$ 2,700
TOTAL O&M COSTS		$ 43,350		$ 43,350
TOTAL FIXED O&M		$ 43,350		$ 43,350
TOTAL VARIABLE 0&M		$ -		$ -
YEARLY INCREASE			$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 7: Gravity Collection w/ Living Machine WWTP**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 4,199,301			
Salvage Value				$ 2,519,581
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 233,295			
15 yr life	$ 139,977			
Replacement Cost			$ 139,977	
Salvage Value				$ 93,318
Auxiliary Equipment				
15 yr life	$ 69,988			
10 yr life	$ 23,329			
Replacement Cost		$ 23,329	$ 69,988	$ 46,659
Salvage Value				
Other Costs				
Contingencies	$ 470,000			
Technical Services	$ 898,636			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 6,084,526			
TOTAL REPLACEMENT COST		$ 23,329	$ 209,965	
TOTAL SALVAGE VALUE				$ 2,709,557

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 7: Gravity Collection w/ Living Machine WWTP**

0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 6,084,526			
Replacement Cost at Year 10:		$ 23,329		
Replacement Cost at Year 15:		$ 209,965		
Salvage Value at Year 20:				
Structures		$ 2,519,581		
Process Equipment		$ 93,318		
Auxiliary Equipment		$ 46,659		
Land		$ 50,000		
Total		$ 2,709,557		
Constant Annual Operation & Maintenance Cost:			$ 43,350	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 6,084,526
Constant O&M	$ 823,105
Variable O&M	$ -
Replacement Cost	$ 217,025
Salvage Value (minus)	$ (2,452,320)
Interest During Construction	$ 15,211
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 4,687,546

AVERAGE EQUIVALENT ANNUAL COST **$ 246,876**

Cost Effective Analysis

Project Name:	Village of Peninsula PER	Planning Period:	20
		Intial Year of Planning:	2017
Alternative Name:	**Alt 8: Gravity Collection w/ Cluster WWTPs**	Construction Period(yrs):	1
Real Interest Rate%:	0.50%		

Tap Fees	$	-	
Service Fees	$	-	(Year 1)
Service Fee Growth rate (g(%))		2%	
(g cannot equal Interest rate for equation to be correct)			

Structures Value, year 0:	$4,222,498	90.0%
Process Equipment		
20 yr. Equipment Value, year 0:	$234,583	5.0%
15 yr. Equipment Value, year 0:	$140,750	3.0%
Auxillary Equipment		
15 yr. Equipment Value, year 0:	$70,375	1.5%
10 yr. Equipment Value, year 0:	$23,458	0.5%
		100%

Land Cost:		$	50,000
Total Construction Cost:		$	4,691,664
Contingences:		$	470,000
Technical Services:		$	897,667
Salaries & Administrative Costs			
year	2017	$	23,130
year	2037	$	23,130
Power Costs			
year	2017	$	9,120
year	2037	$	9,120
Sampling Costs			
year	2017	$	8,400
year	2037	$	8,400
Repair & Maintenance Costs			
year	2017	$	15,240
year	2037	$	15,240

Estimate of Operation and Maintenance Cost

Alternative Name: **Alt 8: Gravity Collection w/ Cluster WWTPs**

0	2017		2037
Salaries and Administrative	$ 23,130		$ 23,130
Power	$ 9,120		$ 9,120
Chemicals & Laboratory	$ 8,400		$ 8,400
Repair & Maintenance	$ 15,240		$ 15,240
TOTAL O&M COSTS	$ 55,890		$ 55,890
TOTAL FIXED O&M	$ 55,890		$ 55,890
TOTAL VARIABLE 0&M	$ -		$ -
YEARLY INCREASE		$ -	

Replacement Cost and Salvage Cost Summary

Alternative Name: **Alt 8: Gravity Collection w/ Cluster WWTPs**

0

	Initial Cost at Year 0	Replacement Cost at Year 10	Replacement Cost at Year 15	Salvage Value at Year 20
Structures (Buildings / Piping)				
50 yr life	$ 4,222,498			
Salvage Value				$ 2,533,499
Process Equipment (Controls / Valves / Meter)				
20 yr life	$ 234,583			
15 yr life	$ 140,750			
Replacement Cost			$ 140,750	
Salvage Value				$ 93,833
Auxiliary Equipment				
15 yr life	$ 70,375			
10 yr life	$ 23,458			
Replacement Cost		$ 23,458	$ 70,375	$ 46,917
Salvage Value				
Other Costs				
Contingencies	$ 470,000			
Technical Services	$ 897,667			
Land	$ 50,000			$ 50,000
TOTAL PROJECT COST	$ 6,109,331			
TOTAL REPLACEMENT COST		$ 23,458	$ 211,125	
TOTAL SALVAGE VALUE				$ 2,724,248

Average Equivalent Annual Cost Determination

Alternative Name: **Alt 8: Gravity Collection w/ Cluster WWTPs**
0

Planning Period:	20	Construction Period(yrs):	1	
Initial Cost of Project:	$ 6,109,331			
Replacement Cost at Year 10:		$ 23,458		
Replacement Cost at Year 15:		$ 211,125		
Salvage Value at Year 20:				
Structures		$ 2,533,499		
Process Equipment		$ 93,833		
Auxiliary Equipment		$ 46,917		
Land		$ 50,000		
Total		$ 2,724,248		
Constant Annual Operation & Maintenance Cost:			$ 55,890	
Variable Annual Operation & Maintenance Cost:			$ -	Year 0
			$ -	Year 20
Interest Rate	0.50%			

Determine Persent Worth & Average Equivalent Annual Cost of this Plan over 20 years

Factors:	20 yrs	0.50% %
Present Worth (PW) of Constant annual O&M cost(P/A):		18.98741915
PW of variable annual O&M cost (annual increase)(P/G):		177.2322123
Present Worth of Replacement Cost - Year 10(P/F):		0.951347941
Present Worth of Replacement Cost - Year 15:		0.927916877
Present Worth of salvage value:		0.905062904

Interest during construction = Initial cost x (0.5)xPeriod of Construction (Years)xInterest Rate

Equivalent annual Cost = Total Present Worth x (A/P) 0.052666452

Calculations - Present Worth

Initial Cost	$ 6,109,331
Constant O&M	$ 1,061,207
Variable O&M	$ -
Replacement Cost	$ 218,223
Salvage Value (minus)	$ (2,465,616)
Interest During Construction	$ 15,273
Tap Fees	$ -
Service Fees Present Worth using $P=A_1(P/A_1,g,I,n)$	$ -
Total Present Worth	$ 4,938,418

AVERAGE EQUIVALENT ANNUAL COST **$ 260,089**

ANNUAL EQUIVALENT COST SUMMARY

Project Name: Village of Peninsula PER

Project Alternative(s):	Customer Base	Opinion of Total Project Cost	Annual Equivalent Cost	Annual Equivalent Cost/Customer
Alt 1 : Gravity Collection System w/ WWTP	152	**$ 4,815,045.60**	**$ 204,558.12**	**$ 1,345.78**
Alt 2: Pressure Collection w/ WWTP	152	**$ 4,315,654.00**	**$ 228,116.80**	**$ 1,500.77**
Alt 3: Gravity Collection System to Regional WWTP	152	**$ 5,022,258.00**	**$ 297,556.57**	**$ 1,957.61**
Alt 4: Pressure Collection to Regional WWTP	152	**$ 5,188,050.00**	**$ 340,035.99**	**$ 2,237.08**
Alt 5: Gravity Collection w/ MBR WWTP	152	**$ 5,625,835.68**	**$ 242,596.09**	**$ 1,596.03**
Alt 6: STEP Collection System w/ Cluster WWTPs	152	**$ 5,179,379.76**	**$ 268,368.24**	**$ 1,765.58**
Alt 7: Gravity Collection w/ Living Machine WWTP	152	**$ 6,084,525.60**	**$ 246,876.43**	**$ 1,624.19**
Alt 8: Gravity Collection w/ Cluster WWTPs	152	**$ 6,109,330.56**	**$ 260,088.95**	**$ 1,711.11**

REPLACEMENT COST SCHEDULE

Project Name:	Village of Peninsula PER				Annual Replacement Fund Deposit
	Reserve Account - Replacement Costs = Balance				
Project Alternative(s):	5 year	10 year	15 year	20 year	
Alt 1 : Gravity Collection System w/ WWTP	$ -	$ -	$ (18,331.95)	$ (183,319.50)	
	$ -	$ 18,331.95	$ 164,987.55	$ -	$ 12,221.30
	$ -	**$ (18,331.95)**	**$ (183,319.50)**	**$ (183,319.50)**	
Alt 2: Pressure Collection w/ WWTP	$ -	$ -	$ (16,459.88)	$ (164,598.75)	
	$ -	$ 16,459.88	$ 148,138.88	$ -	$ 10,973.25
	$ -	**$ (16,459.88)**	**$ (164,598.75)**	**$ (164,598.75)**	
Alt 3: Gravity Collection System to Regional WWTP	$ -	$ -	$ (19,116.63)	$ (191,166.25)	
	$ -	$ 19,116.63	$ 172,049.63	$ -	$ 12,744.42
	$ -	**$ (19,116.63)**	**$ (191,166.25)**	**$ (191,166.25)**	
Alt 4: Pressure Collection to Regional WWTP	$ -	$ -	$ (19,928.13)	$ (199,281.25)	
	$ -	$ 19,928.13	$ 179,353.13	$ -	$ 13,285.42
	$ -	**$ (19,928.13)**	**$ (199,281.25)**	**$ (199,281.25)**	
Alt 5: Gravity Collection w/ MBR WWTP	$ -	$ -	$ (21,622.83)	$ (216,228.25)	
	$ -	$ 21,622.83	$ 194,605.43	$ -	$ 14,415.22
	$ -	**$ (21,622.83)**	**$ (216,228.25)**	**$ (216,228.25)**	
Alt 6: STEP Collection System w/ Cluster WWTPs	$ -	$ -	$ (177,593.36)	$ (591,977.85)	
	$ -	$ 177,593.36	$ 414,384.50	$ -	$ 39,465.19
	$ -	**$ (177,593.36)**	**$ (591,977.85)**	**$ (591,977.85)**	
Alt 7: Gravity Collection w/ Living Machine WWTP	$ -	$ -	$ (23,329.45)	$ (233,294.50)	
	$ -	$ 23,329.45	$ 209,965.05	$ -	$ 15,552.97
	$ -	**$ (23,329.45)**	**$ (233,294.50)**	**$ (233,294.50)**	
Alt 8: Gravity Collection w/ Cluster WWTPs	$ -	$ -	$ (23,458.32)	$ (234,583.20)	
	$ -	$ 23,458.32	$ 211,124.88	$ -	$ 15,638.88
	$ -	**$ (23,458.32)**	**$ (234,583.20)**	**$ (234,583.20)**	

***Schedule does not include funds collected in O & M estimates**

VI. APPENDIX F – FUNDING SCENARIOS

Village of Peninsula
Estimate of Probable Costs
Preliminary Engineering Report

			Alt 1 : Gravity Collection System w/ WWTP	Alt 2: Pressure Collection w/ WWTP	Alt 3: Gravity Collection System to Regional WWTP	Alt 4: Pressure Collection to Regional WWTP	Alt 5: Gravity Collection w/ MBR WWTP	Alt 6: STEP Collection System w/ Cluster WWTPs	Alt 7: Gravity Collection w/ Living Machine WWTP	Alt 8: Gravity Collection w/ Cluster WWTPs	Worst Case Scenario
Project Cost			**$ 4,815,045.60**	**$4,315,654.00**	**$ 5,022,258.00**	**$5,188,050.00**	**$5,625,835.68**	**$5,179,379.76**	**$6,084,525.60**	**$6,109,330.56**	**$5,625,835.68**
LOANS	(yrs)	(%)									
OWDA	30	1.5%	$3,000,000.00	$2,937,975.00	$3,000,000.00	$3,000,000.00	$2,923,800.00	$3,000,000.00	$3,000,000.00	$3,000,000.00	$0.00
OEPA	20	2.0%	$422,390.00	$0.00	$631,685.00	$790,985.00	$1,279,042.00	$771,519.00	$1,627,890.00	$1,671,664.00	$0.00
OPWC	30	0.0%	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$0.00
USDA/RD	40	3.5%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$5,397,835.68
GRANTS											
USDA (50%)			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
OPWC			$750,000.00	$750,000.00	$750,000.00	$750,000.00	$750,000.00	$750,000.00	$750,000.00	$750,000.00	$0.00
CDBG RPIG			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
OPWC Credit Enhancement			$142,655.60	$127,679.00	$140,573.00	$147,065.00	$172,993.68	$157,860.76	$206,635.60	$187,666.56	$0.00
Formula CDBG			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
OWDA Unsewered Comm.			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
ARC			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	(yrs)	(%)									
BONDING	30	4.5%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
OTHERS											
Tap Fees	$ 1,500.00		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$228,000.00
Prepaids			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Assessment			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Discretionary Funds			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL PROJECT FUNDING			**$4,815,045.60**	**$4,315,654.00**	**$5,022,258.00**	**$5,188,050.00**	**$5,625,835.68**	**$5,179,379.76**	**$6,084,525.60**	**$6,109,330.56**	**$5,625,835.68**
Annual Loan Payments	(yrs)	(%)									
OWDA	30	1.5%	$124,917.56	$122,334.89	$124,917.56	$124,917.56	$121,744.66	$124,917.56	$124,917.56	$124,917.56	$0.00
OEPA	20	2.0%	$25,831.99	$0.00	$38,631.78	$48,374.05	$78,222.01	$47,183.57	$99,556.41	$102,233.48	$0.00
OPWC	30	0.0%	$16,666.67	$16,666.67	$16,666.67	$16,666.67	$16,666.67	$16,666.67	$16,666.67	$16,666.67	$0.00
USDA/RD	40	3.5%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$252,765.97
BONDING	30	4.5%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual O & M			$43,350.00	$84,020.00	$17,052.00	$54,790.00	$54,850.00	$71,605.00	$43,350.00	$55,890.00	$54,850.00
Annual Reserve			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Replacement Fund Deposit			$12,221.30	$10,973.25	$12,744.42	$13,285.42	$14,415.22	$39,465.19	$15,552.97	$15,638.88	$14,415.22
Total Annual Cost			**$222,987.52**	**$233,994.81**	**$210,012.43**	**$258,033.69**	**$285,898.55**	**$299,837.99**	**$300,043.61**	**$315,346.60**	**$322,031.19**
Customers			152	152	152	152	152	152	152	152	152
Yearly Cost			$1,467.02	$1,539.44	$1,381.66	$1,697.59	$1,880.91	$1,972.62	$1,973.97	$2,074.65	$2,118.63
Monthly Cost			$122.25	$128.29	$115.14	$141.47	$156.74	$164.38	$164.50	$172.89	$176.55
Additional Treatment Charges per Month			No	No	Yes	Yes	No	No	No	No	No
$5.11/1000 gallons			-	-	56.03	56.03	-	-	-	-	-
			-	-	-	-	-	-	-	-	-
Expected Average Monthly Bill			**$122.25**	**$128.29**	**$171.17**	**$197.50**	**$156.74**	**$164.38**	**$164.50**	**$172.89**	**$176.55**
Without Replacement Fund Deposit											
Total Annual Cost			$210,766.22	$223,021.56	$197,268.01	$244,748.28	$271,483.34	$260,372.80	$284,490.64	$299,707.72	$307,615.97
Monthly Cost			$115.55	$122.27	$108.15	$134.18	$148.84	$142.75	$155.97	$164.31	$168.65
Expected Average Monthly Bill			$115.55	$122.27	$164.18	$190.21	$148.84	$142.75	$155.97	$164.31	$168.65

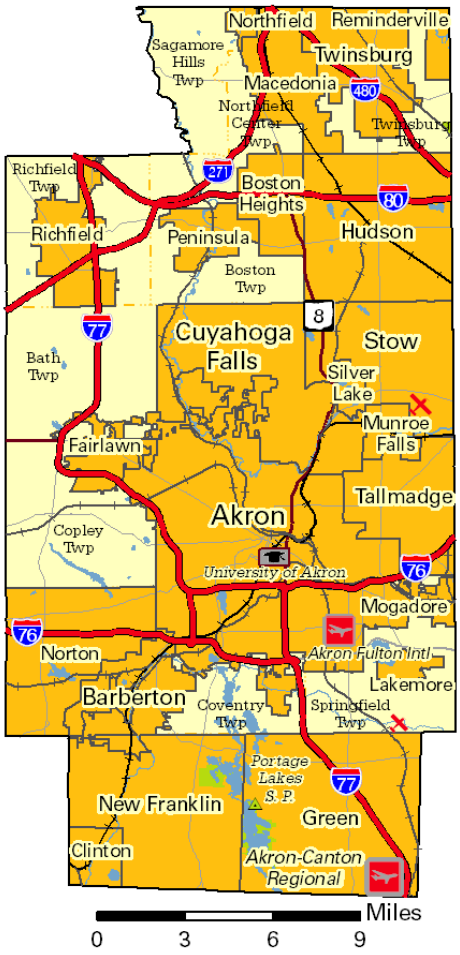
VII. APPENDIX G – COUNTY PROFILE

Ohio County Profiles

Prepared by the Office of Research

Summit County

Established: Act - March 3, 1840
2015 Population: 541,968
Land Area: 412.8 square miles
County Seat: Akron City
Named for: Highest point along the Erie-Ohio Canal



Taxes

Taxable value of real property	$11,023,983,490
Residential	$8,448,869,940
Agriculture	$106,836,780
Industrial	$330,044,870
Commercial	$2,134,510,080
Mineral	$3,721,820
Ohio income tax liability	$409,372,272
Average per return	$1,607.10

Land Use/Land Cover

	Percent
Developed, Lower Intensity	45.52%
Developed, Higher Intensity	11.04%
Barren (strip mines, gravel pits, etc.)	0.12%
Forest	28.38%
Shrub/Scrub and Grasslands	2.53%
Pasture/Hay	5.17%
Cultivated Crops	2.65%
Wetlands	2.65%
Open Water	1.93%

Largest Places

	Est. 2015	Census 2010
Akron city	197,542	199,092
Cuyahoga Falls city	49,146	49,581
Stow city	34,797	34,837
Barberton city	26,234	26,570
Green city	25,898	25,744
Hudson city	22,437	22,262
Twinsburg city	18,872	18,796
Copley twp	17,595	17,304
Tallmadge city (part)	17,223	17,282
Springfield twp	14,741	14,605

UB: Unincorporated balance.

Total Population

Census

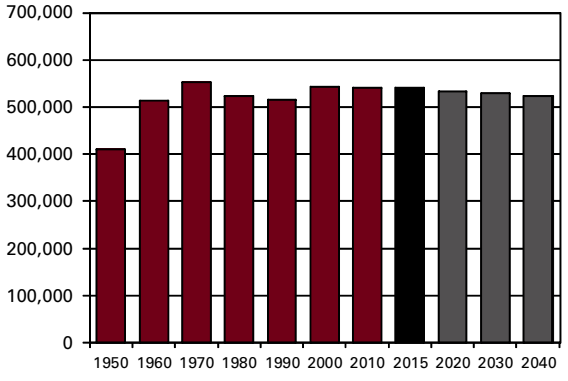
1800		1910	108,253
1810		1920	286,065
1820		1930	344,131
1830		1940	339,405
1840	22,560	1950	410,032
1850	27,485	1960	513,569
1860	27,344	1970	553,371
1870	34,674	1980	524,472
1880	43,788	1990	514,990
1890	54,089	2000	542,899
1900	71,715	2010	541,781

Estimated

2011	541,281
2012	541,192
2013	542,195
2014	542,600
2015	541,968

Projected

2020	534,150
2030	528,990
2040	523,190



Summit County

Population by Race

	Number	Percent
ACS Total Population	541,464	100.0%
White	434,336	80.2%
African-American	77,257	14.3%
Native American	949	0.2%
Asian	12,733	2.4%
Pacific Islander	107	0.0%
Other	2,147	0.4%
Two or More Races	13,935	2.6%
Hispanic (may be of any race)	9,586	1.8%
Total Minority	113,913	21.0%

Educational Attainment

	Number	Percent
Persons 25 years and over	372,056	100.0%
No high school diploma	34,669	9.3%
High school graduate	120,653	32.4%
Some college, no degree	74,734	20.1%
Associate degree	30,651	8.2%
Bachelor's degree	72,406	19.5%
Master's degree or higher	38,943	10.5%

Family Type by Employment Status

	Number	Percent
Total Families	138,355	100.0%
Married couple, husband and wife in labor force	54,380	39.3%
Married couple, husband in labor force, wife not	19,904	14.4%
Married couple, wife in labor force, husband not	8,205	5.9%
Married couple, husband and wife not in labor force	17,675	12.8%
Male householder, in labor force	7,057	5.1%
Male householder, not in labor force	2,202	1.6%
Female householder, in labor force	20,536	14.8%
Female householder, not in labor force	8,396	6.1%

Household Income

	Number	Percent
Total Households	220,710	100.0%
Less than $10,000	17,462	7.9%
$10,000 to $19,999	25,452	11.5%
$20,000 to $29,999	23,735	10.8%
$30,000 to $39,999	22,708	10.3%
$40,000 to $49,999	20,828	9.4%
$50,000 to $59,999	18,233	8.3%
$60,000 to $74,999	23,217	10.5%
$75,000 to $99,999	25,887	11.7%
$100,000 to $149,999	25,961	11.8%
$150,000 to $199,999	8,765	4.0%
$200,000 or more	8,462	3.8%
Median household income	$50,082	

Percentages may not sum to 100% due to rounding.

Population by Age

	Number	Percent
ACS Total Population	541,464	100.0%
Under 5 years	31,009	5.7%
5 to 17 years	88,936	16.4%
18 to 24 years	49,463	9.1%
25 to 44 years	133,102	24.6%
45 to 64 years	155,889	28.8%
65 years and more	83,065	15.3%
Median Age	40.6	

Family Type by Presence of Own Children Under 18

	Number	Percent
Total Families	138,460	100.0%
Married-couple families with own children	37,518	27.1%
Male householder, no wife present, with own children	3,912	2.8%
Female householder, no husband present, with own children	16,608	12.0%
Families with no own children	80,422	58.1%

Poverty Status of Families By Family Type by Presence Of Related Children

	Number	Percent
Total Families	138,460	100.0%
Family income above poverty level	123,640	89.3%
Family income below poverty level	14,820	10.7%
Married couple, with related children	2,107	1.5%
Male householder, no wife present, with related children	1,394	1.0%
Female householder, no husband present, with related children	8,006	5.8%
Families with no related children	3,313	2.4%

Ratio of Income To Poverty Level

	Number	Percent
Population for whom poverty status is determined	532,863	100.0%
Below 50% of poverty level	36,748	6.9%
50% to 99% of poverty level	41,746	7.8%
100% to 124% of poverty level	22,252	4.2%
125% to 149% of poverty level	23,587	4.4%
150% to 184% of poverty level	32,979	6.2%
185% to 199% of poverty level	14,434	2.7%
200% of poverty level or more	361,117	67.8%

Geographical Mobility

	Number	Percent
Population aged 1 year and older	535,665	100.0%
Same house as previous year	475,862	88.8%
Different house, same county	38,344	7.2%
Different county, same state	13,849	2.6%
Different state	5,940	1.1%
Abroad	1,670	0.3%

Summit County

Travel Time To Work

	Number	Percent
Workers 16 years and over	243,452	100.0%
Less than 15 minutes	71,391	29.3%
15 to 29 minutes	104,362	42.9%
30 to 44 minutes	42,646	17.5%
45 to 59 minutes	14,397	5.9%
60 minutes or more	10,656	4.4%
Mean travel time	22.5 minutes	

Housing Units

	Number	Percent
Total housing units	245,178	100.0%
Occupied housing units	220,710	90.0%
Owner occupied	147,956	67.0%
Renter occupied	72,754	33.0%
Vacant housing units	24,468	10.0%

Year Structure Built

	Number	Percent
Total housing units	245,178	100.0%
Built 2010 or later	803	0.3%
Built 2000 to 2009	20,340	8.3%
Built 1990 to 1999	28,150	11.5%
Built 1980 to 1989	20,254	8.3%
Built 1970 to 1979	31,708	12.9%
Built 1960 to 1969	32,282	13.2%
Built 1950 to 1959	43,106	17.6%
Built 1940 to 1949	19,094	7.8%
Built 1939 or earlier	49,441	20.2%
Median year built	1963	

Value for Specified Owner-Occupied Housing Units

	Number	Percent
Specified owner-occupied housing units	147,956	100.0%
Less than $20,000	4,173	2.8%
$20,000 to $39,999	3,565	2.4%
$40,000 to $59,999	8,621	5.8%
$60,000 to $79,999	15,951	10.8%
$80,000 to $99,999	17,297	11.7%
$100,000 to $124,999	18,896	12.8%
$125,000 to $149,999	15,681	10.6%
$150,000 to $199,999	26,066	17.6%
$200,000 to $299,999	23,284	15.7%
$300,000 to $499,999	11,405	7.7%
$500,000 to $999,999	2,435	1.6%
$1,000,000 or more	582	0.4%
Median value	$133,700	

House Heating Fuel

	Number	Percent
Occupied housing units	220,710	100.0%
Utility gas	197,093	89.3%
Bottled, tank or LP gas	2,117	1.0%
Electricity	17,685	8.0%
Fuel oil, kerosene, etc	1,800	0.8%
Coal, coke or wood	759	0.3%
Solar energy or other fuel	775	0.4%
No fuel used	481	0.2%

Percentages may not sum to 100% due to rounding.

Gross Rent

	Number	Percent
Specified renter-occupied housing units	72,754	100.0%
Less than $100	396	0.5%
$100 to $199	1,192	1.6%
$200 to $299	3,314	4.6%
$300 to $399	2,922	4.0%
$400 to $499	3,872	5.3%
$500 to $599	8,581	11.8%
$600 to $699	10,348	14.2%
$700 to $799	9,303	12.8%
$800 to $899	8,599	11.8%
$900 to $999	7,762	10.7%
$1,000 to $1,499	10,535	14.5%
$1,500 or more	2,770	3.8%
No cash rent	3,160	4.3%
Median gross rent	$742	
Median gross rent as a percentage of household income	30.4	

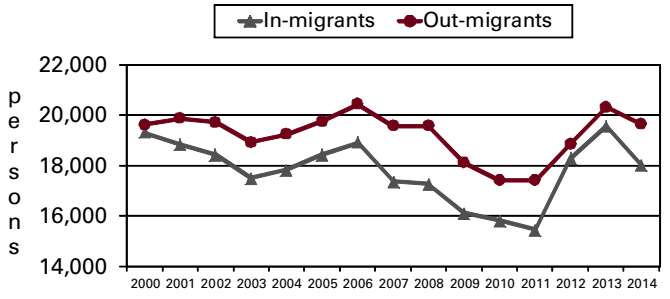
Selected Monthly Owner Costs for Specified Owner-Occupied Housing Units

	Number	Percent
Specified owner-occupied housing units with a mortgage	100,149	100.0%
Less than $400	831	0.8%
$400 to $599	3,830	3.8%
$600 to $799	9,975	10.0%
$800 to $999	15,080	15.1%
$1,000 to $1,249	18,827	18.8%
$1,250 to $1,499	15,471	15.4%
$1,500 to $1,999	18,849	18.8%
$2,000 to $2,999	13,542	13.5%
$3,000 or more	3,744	3.7%
Median monthly owners cost	$1,275	
Median monthly owners cost as a percentage of household income	21.6	

Vital Statistics

	Number	Rate
Births / rate per 1,000 women aged 15 to 44	6,180	60.6
Teen births / rate per 1,000 females 15-19	380	22.5
Deaths / rate per 100,000 population	5,755	1,061.9
Marriages / rate per 1,000 population	2,868	5.3
Divorces / rate per 1,000 population	1,545	2.9

Migration



Summit County

Agriculture

Land in farms (acres)	16,545
Number of farms	304
Average size (acres)	54
Total cash receipts	$11,284,000
Per farm	$37,118
Receipts for crops	$9,784,000
Receipts for livestock/products	$1,499,000

Education

Public schools buildings	148
Students (Average Daily Membership)	73,759
Teachers (Full Time Equivalent)	4,635.3
Expenditures per student	$10,961
Graduation rate	83.6
Non-public schools	39
Students	10,577
4-year public universites	1
Branches	0
2-year public colleges/satellites	0
Private universities and colleges	0
Public libraries (Main / Branches)	7 / 20

Transportation

Registered motor vehicles	515,706
Passenger cars	390,175
Noncommercial trucks	45,428
Total license revenue	$12,926,903.87
Interstate highway miles	90.34
Turnpike miles	13.61
U.S. highway miles	5.85
State highway miles	184.96
County, township, and municipal road miles	2,782.37
Commercial airports	4

Health Care

Physicians (MDs & DOs)	1,883
Registered hospitals	10
Number of beds	2,715
Licensed nursing homes	45
Number of beds	4,287
Licensed residential care	35
Number of beds	3,125
Persons with health insurance (Aged 0 to 64)	90.7%
Adults with insurance (Aged 18 to 64)	89.1%
Children with insurance (Aged Under 19)	95.2%

Voting

Number of registered voters	357,565
Voted in 2014 election	139,640
Percent turnout	39.1%

Communications

Television stations	2
Radio stations	6
Daily newspapers	2
Circulation	97,713
Weekly newspapers	8
Circulation	104,860

Crime

Total crimes reported in Uniform Crime Report	18,178
Violent crime	1,882
Property crime	16,176
Arson	120

Finance

FDIC insured financial institutions (HQs)	3
Assets (000)	$25,827,171
Branch offices	165
Institutions represented	21

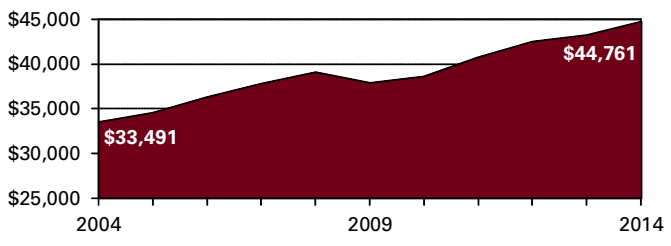
Transfer Payments

Total transfer payments	$4,614,351,000
Payments to individuals	$4,503,837,000
Retirement and disability	$1,672,234,000
Medical payments	$2,095,464,000
Income maintenance (Supplemental SSI, family assistance, food stamps, etc)	$459,660,000
Unemployment benefits	$48,169,000
Veterans benefits	$99,619,000
Federal education and training assistance	$90,292,000
Other payments to individuals	$38,399,000
Total personal income	$24,258,142,000
Depedency ratio (Percent of income from transfer payments)	19.0%

State Parks, Forests, Nature Preserves, Scenic Waterways, And Wildlife Areas

Areas/Facilities	14
Acreage	2,938.48

Per Capita Personal Income



Summit County

Civilian Labor Force

	2011	2012	2013	2014	2015
Civilian labor force	276,600	272,300	271,600	272,200	272,900
Employed	251,500	252,000	250,900	256,200	259,400
Unemployed	25,100	20,300	20,700	16,000	13,500
Unemployment rate	9.1	7.5	7.6	5.9	4.9

Establishments, Employment, and Wages by Sector: 2014

Industrial Sector	Number of Establishments	Average Employment	Total Wages	Average Weekly Wage
Private Sector	13,564	231,696	$10,505,480,743	$872
Goods-Producing	1,972	39,744	$2,188,271,119	$1,059
Natural Resources and Mining	30	178	$8,396,274	$906
Constuction	1,022	10,004	$543,501,634	$1,045
Manufacturing	920	29,562	$1,636,373,211	$1,064
Service-Providing	11,593	191,952	$8,317,209,624	$833
Trade, Transportation and Utilities	3,175	52,275	$2,086,094,716	$767
Information	194	3,484	$202,843,130	$1,120
Financial Services	1,294	11,296	$666,809,657	$1,135
Professional and Business Services	2,608	45,173	$2,757,413,996	$1,174
Education and Health Services	1,708	45,602	$1,974,587,622	$833
Leisure and Hospitality	1,343	25,790	$395,644,701	$295
Other Services	1,234	8,268	$232,394,173	$541
Federal Government		1,968	$129,558,299	$1,266
State Government		4,919	$270,598,367	$1,058
Local Government		21,532	$987,314,407	$882

Private Sector total includes Unclassified establishments not shown.

Change Since 2009

Private Sector	-5.1%	3.3%	15.1%	11.4%
Goods-Producing	-11.4%	3.8%	13.2%	9.1%
Natural Resources and Mining	7.1%	-19.1%	-19.7%	-0.8%
Construction	-16.8%	5.9%	29.2%	21.9%
Manufacturing	-5.2%	3.3%	8.9%	5.3%
Service-Producing	-3.9%	3.2%	15.6%	12.0%
Trade, Transportation and Utilities	-6.8%	2.6%	11.6%	8.6%
Information	-2.0%	-8.2%	1.7%	10.8%
Financial Services	-6.2%	-0.4%	17.4%	17.9%
Professional and Business Services	-3.5%	4.2%	19.6%	14.8%
Education and Health Services	2.5%	2.6%	13.3%	10.5%
Leisure and Hospitality	-1.0%	7.8%	26.1%	17.1%
Other Services	-4.6%	2.2%	19.2%	16.6%
Federal Government		1.3%	11.9%	10.4%
State Government		-2.4%	3.0%	5.5%
Local Government		-10.6%	-3.0%	8.6%

Business Numbers

	2011	2012	2013	2014	2015
Business starts	875	1,067	823	940	828
Active businesses	10,616	10,486	10,437	10,337	10,276

Residential Construction

	2011	2012	2013	2014	2015
Total units	527	440	435	471	561
Total valuation (000)	$93,907	$95,830	$109,538	$130,149	$143,247
Total single-unit bldgs	476	437	435	471	561
Average cost per unit	$193,655	$218,719	$251,813	$276,325	$255,342
Total multi-unit bldg units	51	3	0	0	0
Average cost per unit	$33,866	$83,333	$0	$0	$0

Major & Notable Employers

Akron City Schools	Govt
Akron General Health System	Serv
Children's Hospital Medical Center	Serv
Diebold Inc	Mfg
FirstEnergy Corp	Utility
Goodyear Tire & Rubber Co	Mfg
Jo-Ann Stores Inc	Trade
McDermott Int'l/Babcock & Wilcox	Mfg
Signet Group plc/Sterling Inc	Trade
Summa Health System	Serv
University of Akron	Govt

Ohio
2010 Census Population For Cities and Villages

Ohio Department of Development

Name	Census Population 2010	2000	1990	Percent Change 2000 to 2010	Percent Change 1990 to 2000
Palestine village	200	170	176	17.6%	-3.4%
Pandora village	1,153	1,188	1,007	-2.9%	18.0%
Parma city	81,601	85,655	87,876	-4.7%	-2.5%
Parma Heights city	20,718	21,659	21,448	-4.3%	1.0%
Parral village	218	241	260	-9.5%	-7.3%
Pataskala city	14,962	10,249	3,046	46.0%	236.5%
Patterson village	139	138	107	0.7%	29.0%
Paulding village	3,605	3,595	2,589	0.3%	38.9%
Payne village	1,194	1,166	1,244	2.4%	-6.3%
Peebles village	1,782	1,739	1,782	2.5%	-2.4%
Pemberville village	1,371	1,365	1,279	0.4%	6.7%
Peninsula village	565	602	559	-6.1%	7.7%
Pepper Pike city	5,979	6,040	6,185	-1.0%	-2.3%
Perry village	1,663	1,195	1,012	39.2%	18.1%
Perrysburg city	20,623	16,945	12,551	21.7%	35.0%
Perrysville village	735	816	704	-9.9%	15.9%
Phillipsburg village	557	628	643	-11.3%	-2.3%
Philo village	733	769	818	-4.7%	-6.0%
Pickerington city	18,291	9,792	5,684	86.8%	72.3%
Fairfield County part	18,205	9,737	5,645	87.0%	72.5%
Franklin County part	86	55	39	56.4%	41.0%
Piketon village	2,181	1,907	1,723	14.4%	10.7%
Pioneer village	1,380	1,460	1,295	-5.5%	12.7%
Piqua city	20,522	20,738	20,612	-1.0%	0.6%
Pitsburg village	388	392	432	-1.0%	-9.3%
Plain City village	4,225	2,832	2,241	49.2%	26.4%
Madison County part	3,397	1,937	1,302	75.4%	48.8%
Union County part	828	895	939	-7.5%	-4.7%
Plainfield village	157	158	189	-0.6%	-16.4%
Pleasant City village	447	439	424	1.8%	3.5%
Pleasant Hill village	1,200	1,134	1,066	5.8%	6.4%
Pleasant Plain village	154	156	137	-1.3%	13.9%
Pleasantville village	960	877	926	9.5%	-5.3%
Plymouth village	1,857	1,852	1,935	0.3%	-4.3%
Huron County part	909	849	929	7.1%	-8.6%
Richland County part	948	1,003	1,006	-5.5%	-0.3%
Poland village	2,555	2,866	2,992	-10.9%	-4.2%
Polk village	336	357	363	-5.9%	-1.7%
Pomeroy village	1,852	1,966	2,247	-5.8%	-12.5%
Portage village	438	428	480	2.3%	-10.8%
Port Clinton city	6,056	6,391	7,106	-5.2%	-10.1%
Port Jefferson village	371	321	340	15.6%	-5.6%
Portsmouth city	20,226	20,909	22,744	-3.3%	-8.1%
Port Washington village	569	552	523	3.1%	5.5%
Port William village	254	258	233	-1.6%	10.7%
Potsdam village	288	203	289	41.9%	-29.8%
Powell city	11,500	6,247	2,154	84.1%	190.0%
Powhatan Point village	1,592	1,744	1,812	-8.7%	-3.8%
Proctorville village	574	620	760	-7.4%	-18.4%
Prospect village	1,112	1,191	1,176	-6.6%	1.3%

VIII. APPENDIX H – AGENCY CORRESPONDENCE

United States Department of the Interior
NATIONAL PARK SERVICE
Cuyahoga Valley National Park
15610 Vaughn Road
Brecksville, Ohio 44141-3097

IN REPLY REFER TO:
10.D. (CUVA)

November 17, 2017

Mr. Frank O'Connor, Program Manager
Buffalo District Environmental Infrastructure Program
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Dear Mr. O'Connor:

Cuyahoga Valley National Park (CVNP) was established for the protection and preservation of the historic, scenic, natural and recreational values of the Cuyahoga River and its adjacent lands. As the largest public landowner along the Cuyahoga River, we strongly support the Village of Peninsula's application through the Small Community Environmental Infrastructure Group (SCEIG) for funding of a community Wastewater Collection and Treatment System under the Ohio Environmental Infrastructure Program (OEIP).

Since being established in 1974, CVNP has matured to become a significant regional tourism destination in Northeast Ohio, and is consistently ranked in the top 12 National Parks in the country for visitation. In 2016, there were 2.4 million visits to the park, and most of those visitors come to recreate along the river corridor, on the Ohio & Erie Canal Towpath Trail, and the Cuyahoga Valley Scenic Railroad. Because of its central location, the tiny Village of Peninsula (less than 600 residents) serves as the primary commercial services destination for park visitors. This influx of visitors places great pressure on existing septic systems of the Village.

CVNP has recently joined efforts of regional stakeholders to actively restore the Cuyahoga River to a condition that will achieve de-listing from designation as an impaired waterway and a Great Lakes Area of Concern (AOC) by 2021. In 2017, the park established an interagency agreement with U.S. Army Corps of Engineers (USACE) Buffalo District to cooperate on strategic management actions that will lead to de-listing the AOC. Because the Village of Peninsula is the last remaining non-sewered community on the main stem of the Cuyahoga River, construction of a village wastewater system would contribute substantially to improving water quality and to de-listing efforts.

For the reasons stated above, we believe the Village of Peninsula qualifies as having special circumstances for consideration and would be a strong contender to receive both district and discretionary funding through the OEIP. That level of funding would allow the Village to meet

expectations of the Ohio EPA to complete installation of the system by 2019. We encourage you to give full consideration to their application.

Should you have any questions, please contact Deputy Superintendent, Paul Stoehr at 440-546-5903 or Paul_Stoehr@nps.gov.

Sincerely,

Craig Kenkel
Superintendent

Cc: Dee Holody, Council, Village of Peninsula
Douglas Mayer, Mayor, Village of Peninsula
Ken Heigel, OWDA, SCEIG
Sharanna Romans, USACE, Huntington District

SHERROD BROWN
OHIO

COMMITTEES:
AGRICULTURE, NUTRITION, AND FORESTRY
BANKING, HOUSING, AND URBAN AFFAIRS
FINANCE
VETERANS' AFFAIRS

United States Senate

WASHINGTON, DC 20510 - 3505

November 17, 2017

Mr. Frank O'Connor
Buffalo District Environmental Infrastructure Program Manager
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Dear Mr. O'Connor:

As the Army Corps of Engineers reviews applications for its Ohio Environmental Infrastructure Program, please consider the proposal from the Village of Peninsula, Ohio.

The village requests $3 million to fund its new Village of Peninsula Wastewater Collection and Treatment System. There is an immediate need for $400,000 to cover the costs of the design engineering (the initial phase of the project). The stretch of the Cuyahoga River around the village has been listed as a federal "area of concern" due to its lack of a central sewer system. Due to this designation, the Ohio Environmental Protection Agency (EPA) has advised the village it has three years to install a sewer system. While the EPA has been working with the village to address this issue, due to several terrain challenges, installing a wastewater system is expected to cost approximately $5-6 million.

Please give full and fair consideration to this project. I ask that you keep my office informed of the status of this proposal.

Sincerely,

Sherrod Brown

Sherrod Brown
United States Senator

Cc: Douglas Mayer, Mayor, Village of Peninsula
Dee Holody, Village of Peninsula
Ken Heigel, OWDA, SCEIG

ROB PORTMAN
OHIO

United States Senate

WASHINGTON, DC 20510

COMMITTEES:
ENERGY AND NATURAL RESOURCES
FINANCE
FOREIGN RELATIONS
HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

November 17, 2017

Mr. Frank O'Connor
Buffalo District Environmental Infrastructure Program Manager
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207-3199

Dear Mr. O'Connor,

I write to bring to your attention the competitive grant application submitted by the Village of Peninsula, Ohio for funding from the US Army Corps of Engineers (USACE) through its Ohio Small Communities Environmental Infrastructure Group (SCEIG).

I understand that funding would be used for the design and construction of a village wastewater collection and treatment system. This project is critical to the Cuyahoga Valley National Park (CVNP) and its efforts to de-list the lower Cuyahoga River as a Federal Area of Concern by the Ohio EPA. The Village of Peninsula is the last remaining community along the Cuyahoga River that does not have a central sewer system and the river cannot be de-listed without the sewer system in place.

Further, the Village of Peninsula is listed on the National Register of Historic Places, and is known as the "Heart of the Cuyahoga Valley National Park." Its current wastewater system has proven inadequate to handle the large increase in tourism the village has experienced recently being the convergence of three major tourism venues.

Please give all due consideration to this request. If there are any questions, please contact my Grant Coordinator, Jason Knox at (614) 469-6774. Thank you.

Sincerely,

Rob Portman
United States Senator

448 Russell Senate Office Building
Washington, DC 20510
Phone: (202) 224-3353

312 Walnut Street
Suite 3425
Cincinnati, OH 45202
Phone: (513) 684-3265

1240 East 9th Street
Suite 3061
Cleveland, OH 44199
Phone: (216) 522-7095

37 West Broad Street
Suite 300
Columbus, OH 43215
Phone: (614) 469-6774

420 Madison Avenue
Suite 1210
Toledo, OH 43604
Phone: (419) 259-3895

www.portman.senate.gov

Peninsula Village

(last Informix comparison: 8/27/07)

LIST OF DWELLINGS SERVED BY INDIVIDUAL SEWAGE TREATMENT SYSTEMS

			VARIANCE	NEW SUBD	EMI-PUBLIC
TOTAL DISCHAGING:	100	40%	0	0	0
TOTAL NON-DISCHARGING:	55	22%	0	0	0
TOTAL UNKNOWN:	93	38%	0	0	0
TOTAL SYSTEMS:	248		0	0	0

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
			1019		AKRON PENINSULA	RD		1100478	U				E	670
			5555		AKRON PENINSULA	RD		1100065	N				C	463
			5940		AKRON PENINSULA	RD		1100518	N				R	520
			5950		AKRON PENINSULA	RD		1100519	N				R	520
			5960		AKRON PENINSULA	RD		1100520	N				R	520
			5972		AKRON PENINSULA	RD		1100521	N				R	510
			5986		AKRON PENINSULA	RD		1100112	U				R	510
			6003		AKRON PENINSULA	RD		1100076	U				R	510
			6031		AKRON PENINSULA	RD		1100129	U				R	510
			6035		AKRON PENINSULA	RD		1100071	U				R	510
	Laura	DeYoung	6560		AKRON PENINSULA	RD		1100438	U				E	600
Noreen	John	Sorna	6711		AKRON PENINSULA	RD		1100113	Y				E	600
			6770		AKRON PENINSULA	RD		1100435	Y				R	510
Kim	Stephan	Stinson	6791		AKRON PENINSULA	RD		1100482	Y				R	510
			1812		BRONSON			1110740	U				R	510
	Debora	Roznovs	1813		BRONSON	AVE		1100309	U				R	510
	Tod	BAUMGAR	1818		BRONSON	AVE		1100109	Y				R	510
Angela	EUGENE	Damron	1824		BRONSON	AVE		1100108	U				R	510
Janice	DAN	Schneider	1825		BRONSON	AVE		1100384	Y				R	510
	Bill	Sneider	1832		BRONSON	AVE		1100402	Y				R	510
	SHARON	Collins	1839		BRONSON	AVE		1100094	Y				R	510
			1853		BRONSON	AVE		1100395	N				R	510
Janet	Bill	Sneider	1860		BRONSON	AVE		1100401	N				R	510
Debbie	GEORGE	Johnston	1863		BRONSON	AVE		1100248	Y				R	510
Maureen	Marty	Duffy-Riggi	1869		BRONSON	AVE		1100552	U				R	510
Nahia	Bob	Hagan	1880		BRONSON	AVE		1100202	N				R	510
Lynda	Paul	Logan	1883		BRONSON	AVE		1100296	N				R	510
	DIANE	Holody	2008		BRONSON	AVE		1100205	U				R	510
Debbie	Joe	Mazur	2009		BRONSON	AVE		1100291	Y				R	510
Natalie	ROGER	Mitchell	2074		BRONSON	AVE		1110701	U				R	510
			5978		CANAL	ST		1100398	U				R	510
			6000		CANAL	ST	S	1100191	N				R	510
			6010		CANAL	ST	S	1100192	N				R	510
			6045		CANAL	ST		1100209	U				E	600
			5935		CENTER	ST		1100594	U				R	510
			5953		CENTER	ST		1100538	Y				R	510
			5964		CENTER	ST		1100161	N				R	510
	JAMES	Gosselin	5976		CENTER	ST		1100166	Y				R	510
Leslie	JON	Hampshire	5982		CENTER	ST		1100474	Y				R	510

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
			5988		CENTER	ST		1100470	N				R	510
			5993		CENTER	ST		1100281	N				R	510
			5995		CENTER	ST		1100017	U				C	401
			6001		CENTER	ST		1100169	U				R	510
	MARSHAL	Burgy	5975		CHURCH	ST		1100165	N				R	510
	Ion	Cook	4166		CONGER	LANE		1100106	N				R	510
	SCOTT	Mercer	4186		CONGER	LANE		1100203	Y				R	510
Joanne	JAMES	Kim/Nash	1431		DELL	RD		1100356	U				R	510
Brenda	SEAN	Whitmore	1503		DELL	RD		1100489	Y				R	510
Christin	KEVIN	Royer	1521		DELL	RD		1100182	N				R	510
			5287		DOGWOOD	DR		1100043	Y				E	600
			5307		DOGWOOD	DR		1100066	U				E	600
			5307		DOGWOOD	DR		1100147	U				E	600
			5324		DOGWOOD	DR		1100271	U				E	600
			5331		DOGWOOD	DR		1100144	U				E	600
			6004		LOCUST	ST	S	1100088	Y				R	510
			6008		LOCUST	ST	S	1100152	Y				R	510
			6017		LOCUST	ST		1100493	Y				R	510
			6020		LOCUST	ST	S	1100156	U				R	510
			6023		LOCUST	ST	S	1100044	Y				R	510
			6028		LOCUST	ST	S	1100155	U				R	510
			6034		LOCUST	ST	S	1100091	U				E	685
			6084		LOCUST	ST	N	1100218	Y				R	510
			6089		LOCUST	ST	N	1100325	U				R	510
			6090		LOCUST	ST	N	1100049	Y				R	510
			6109		LOCUST	ST	N	1100397	Y				R	510
			6112		LOCUST	ST	N	1100124	Y				R	510
			6117		LOCUST	ST	N	1100140	N				R	510
			6122		LOCUST	ST	N	1100012	N				R	520
			6133		LOCUST	ST	N	1100581	U				R	510
			6156		LOCUST	ST	N	1100515	Y				R	510
			6157		LOCUST	ST	N	1100582	Y				R	510
			6160		LOCUST	ST	N	1100585	Y				R	510
			6163		LOCUST	ST	N	1100053	U				R	510
Denise	LEONARD	Litzenger	1508		MAIN	ST		1100135	Y				R	510
KIM	Jim	Hammond	1518		MAIN	ST		1100173	U				R	510
	paul	Shaver	1530		MAIN	ST	E	1110759	Y				R	510
	CHARMAI	Lippian	1531		MAIN	ST		1110730	Y				R	510
Bonnie	LAWRENC	Ravanel/S	1542		MAIN	ST		1100046	U				R	510
Paula	STEVEN	Grimes	1543		MAIN	ST		1100167	Y				R	510
	ALEX	Rogers	1557		MAIN	ST		1100070	Y				R	510
Doborah	TAYLOR	Suchan	1564		MAIN	ST		1100250	U				R	510
Lori	Joseph	Badger	1565		MAIN	ST		1100413	U				R	510
			1593		MAIN	ST		1100008	Y				R	510
			1599		MAIN	ST		1100226	Y				R	510
			1605		MAIN	ST		1100219	U				R	510
			1664		MAIN	ST		1100171	U				E	600
	DIANE	Seskes	1671		MAIN	ST		1100208	U				R	510

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
			1675		MAIN	ST		1110640	Y				R	510
	KAREN	Walters	1678		MAIN	ST		1100280	Y				R	510
Rita	Dave	Johnson	1701		MAIN	ST		1100246	U				R	510
Terry	DENISE	Lahoski	1707		MAIN	ST		1100207	Y				R	510
	ANDREW	Lavicka	1715		MAIN	ST		1100334	Y				R	510
Maryanne	CHARLES	Moyer	1720		MAIN	ST		1100501	Y				R	510
			1726		MAIN	ST		1100565	Y				R	510
Lois	DOUGLAS	Unger	1727		MAIN	ST		1100437	Y				R	510
patricia	AUSTIL	Spencer	1738		MAIN	ST		1100102	Y				R	510
Jurate	Edward	Balas/Andr	1741		MAIN	ST		1100068	Y				R	510
Jeanne	TODD	Clarke	1749		MAIN	ST		1100491	U				R	510
	CHRISTIN	Perry	1754		MAIN	ST		1100100	N				R	510
Norma	Greg	Preneta	1755		MAIN	ST		1100425	Y				R	510
	DAVID	Cody	1764		MAIN	ST		1100560	U				R	510
			1801		MAIN	ST		1100244	U				R	510
	Morgan	Rochell	1802		MAIN	ST		1100345	U				C	499
Sue	Barney	Barnhart	1816		MAIN	ST		1100062	Y				R	510
Lori	BOBBY	Anderson	1834		MAIN	ST		1100386	Y				R	510
	Larry	Sulzar	1841		MAIN	ST		1100195	Y				R	510
			1856		MAIN	ST		1100259	Y				R	510
			1859		MAIN	ST		1100069	Y				R	510
	ERIC	Peterson	1868		MAIN	ST		1110709	Y				R	510
	Ken	WISNIEWS	1876		MAIN	ST		1110708	N				R	510
	MICHAEL	Ritch	1886		MAIN	ST		1100359	Y				R	510
Barbara	BARRY	Gedeon/Ne	1893		MAIN	ST		1100185	Y				R	510
Nancy	Bill	Clifton	1904		MAIN	ST		1100304	Y				R	510
Nina	Wayne	Alvis	1919		MAIN	ST		1100315	Y				R	510
Mary	Ken	Focazio	1938		MAIN	ST		1100411	Y				R	510
Josephine	Buddy	Milhoan	1941		MAIN	ST		1100126	U				R	510
Evelyn	FRANK	KACZMAR	1985		MAIN	ST		1100252	Y				R	510
Nancy	Bob	Focaret	1991		MAIN	ST		1100347	U				R	510
			2051		MAIN	ST		1100461	U				R	510
			2061		MAIN	ST		1100562	N				R	510
Renee	Bill	Dent	2069		MAIN	ST		1100564	U				R	510
	NANCY	James	2111		MAIN	ST		1100245	Y				R	510
	Gabriel	Friedman	2121		MAIN	ST		1100503	U				R	510
			2135		MAIN	ST		1100494	N				R	510
Rosemary	GEORGE	Zampelli	2220		MAIN	ST		1100268	Y				R	510
Marcia	JACK	Mercer	2239		MAIN	ST		1100293	U				R	510
			2294		MAIN	ST		1100555	U				R	510
Rebecca	TIMOTHY	Bergdorf	2310		MAIN	ST		1100556	Y				R	510
			2318		MAIN	ST		1100130	U				R	510
Gwen	Dave	Waight	2336		MAIN	ST		1100596	Y				R	510
	Carol	Adams	2355		MAIN	ST		1100001	U				R	510
	THEODOR	MELENCH	2400		MAIN	ST		1110712	N				R	510
			2420		MAIN	ST		1110719	U				R	510
	MICHAEL	Presley	2460		MAIN	ST		1110718	U				R	520
			2485		MAIN	ST		1110627	N				R	510

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
			2551		MAIN	ST		1110729	Y				R	510
			1996		MAJOR	RD		1110611	U				R	510
Barbara	JAMES	Bauman	1537		MILL	ST		1100483	N				R	510
			1540		MILL	ST		1100168	Y				R	510
Nancy	ROBERT	Brunswick	1550		MILL	ST		1100255	Y				R	510
Kathy	RICHARD	Slocum	1563		MILL	ST		1100258	N				R	510
			1643		ORCHARD	ST		1100459	Y				R	510
	DAVID	Shankland	1646		ORCHARD	ST		1100289	Y				R	510
Stacy	DAVID	Wessel	1648		ORCHARD	ST		1100003	Y				R	510
			1651		ORCHARD	ST		1100154	U				R	510
	KIMBERLY	Dewester	1660		ORCHARD	ST		1100424	U				R	510
			6013		PARKER	CT		1100341	U				R	510
			6016		PARKER	CT		1100342	Y				R	520
Emily	MARK	Stefana/Tra	1019		RICHFIELD HUDSON	RD		1100439	U				E	600
			5828		RIDGEWAY	ST		1100298	Y				R	510
			5829		RIDGEWAY	ST		1100400	N				R	510
			6134		RIDGEWAY	ST		1110707	N				R	510
Nancy	JAMES	Miller	5712		RIVERVIEW	RD		1100295	N				R	510
			6050		RIVERVIEW	RD		1100539	U				A	101
			6050		RIVERVIEW	RD		1100539	U				A	101
			6075		RIVERVIEW	RD		1100436	Y				R	510
			6078		RIVERVIEW	RD		1100500	U				R	510
			6081		RIVERVIEW	RD		1100405	U				R	510
			6085		RIVERVIEW	RD		1100319	Y				R	510
			6086		RIVERVIEW	RD		1100423	U				R	510
			6093		RIVERVIEW	RD		1100256	Y				R	510
			6116		RIVERVIEW	RD		1110741	U				R	510
			6123		RIVERVIEW	RD		1100011	U				R	510
			6128		RIVERVIEW	RD		1100269	U				R	510
			6131		RIVERVIEW	RD		1100174	Y				R	510
			6184		RIVERVIEW	RD		1100217	U				R	510
			6238		RIVERVIEW	RD		1100267	Y				R	510
			6251		RIVERVIEW	RD		1100125	Y				R	510
			6267		RIVERVIEW	RD		1100340	U				R	510
			6268		RIVERVIEW	RD		1100013	Y				R	510
	KEVIN	Balinski	6278		RIVERVIEW	RD		1100014	U				R	510
Sharon	Daniel	KRACHINS	6284		RIVERVIEW	RD		1100138	Y				R	510
Randi	CLAIRE	Farling/Roc	6287		RIVERVIEW	RD		1100301	Y				R	510
Susan	RICHARD	Barnes/Re	6290		RIVERVIEW	RD		1100414	Y				R	510
Nicole	matthew	Nolan	6302		RIVERVIEW	RD		1100151	Y				R	510
	GENE	DEMBKOV	6312		RIVERVIEW	RD		1100406	Y				R	510
	GLENDA	Grezlik	6323		RIVERVIEW	RD		1100189	Y				R	510
Annette	Tom	Morgan	6326		RIVERVIEW	RD		1100504	N				R	510
Ann	JASON	Sargent	6336		RIVERVIEW	RD		1100302	U				R	510
	Wilma	Riggins	6350		RIVERVIEW	RD		1100358	N				R	510
Heather	JON	Johnston	6375		RIVERVIEW	RD		1100257	Y				R	510
Amber	KEITH	Saffles	6376		RIVERVIEW	RD		1100041	Y				R	510
	Mary	Booth	6404		RIVERVIEW	RD		1100032	Y				R	510

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
Lori	Bill	Stalker	6413		RIVERVIEW	RD		1110703	Y				R	510
Dawn	GREGORY	Canda	6421		RIVERVIEW	RD		1100030	Y				R	510
Diane	MATTHEW	Fleming	6454		RIVERVIEW	RD		1100095	U				R	510
Sandy	GEORGE	Cull	6461		RIVERVIEW	RD		1100115	U				R	510
	CHARLES	Hunt	6476		RIVERVIEW	RD		1100061	N				R	510
Charlene	Tom	Cooper	1519		STINE	RD		1100375	N				R	510
Gary	PAMELA	Jones	1528		STINE	RD		1110652	Y				R	510
Margerate	CHRISTIN	Hauberg/S	1539		STINE	RD		1100316	N				R	510
			1563		STINE	RD		1100422	U				R	510
Barbara	MICHAEL	Kaplan	1570		STINE	RD		1100096	Y				R	510
Mary	RICHARD	Schoele	1601		STINE	RD		1100551	N				R	510
	BRENDA	Nichols	1629		STINE	RD		1100572	N				R	510
			1657		STINE	RD		1110600	U				R	510
			1674		STINE	RD		1100098	U				R	510
Jodi	TERRY	Padrutt	1677		STINE	RD		1100523	U				R	510
Terra	RICHARD	Brown	1686		STINE	RD		1100099	Y				R	510
	ALLISON	Kontur	1710		STINE	RD		1100588	U				R	510
			1720		STINE	RD		1100590	U				R	510
Tammie	DAVID	Reinhart	1745		STINE	RD		1110753	U				C	499
			1774		STINE	RD		1100307	Y				R	510
Betty	Ralph	Reinhart	1787		STINE	RD		1110629	N				R	510
Peggy	Ralph	Myello	1794		STINE	RD		1100308	U				R	510
Lindsay	LESLIE	Abbott/Fial	1815		STINE	RD		1100570	N				R	510
	NANCY	Tesmer	1830		STINE	RD		1100362	U				R	510
Julia	Bob	Rodatt	1834		STINE	RD		1100364	Y				R	510
			1845		STINE	RD		1100568	N				R	510
Pam	MATTHEW	Setzeko	1854		STINE	RD		1100380	Y				R	510
Leona	TIMOTHY	Tesmer	1874		STINE	RD		1100417	U				R	510
Laura	DANIEL	Perko	1883		STINE	RD		1110621	N				R	510
Karen	Ken	FRANKEN	1910		STINE	RD		1100164	N				R	510
Polly	Bob	Rutledge	1936		STINE	RD		1100374	U				R	510
	Patty	Tesmer	1941		STINE	RD		1100416	Y				R	510
	Dick	Fisher	1955		STINE	RD		1100159	Y				R	510
Jean	Dan	Wurzbache	1962		STINE	RD		1100492	Y				R	510
Mary	JERRY	Schall	1967		STINE	RD		1100264	Y				R	510
Carol	Bob	Leiter	1990		STINE	RD		1100249	Y				R	510
Wendy	DAVID	Mayer	1993		STINE	RD		1100009	N				R	510
	JOYCE	Parsons	2001		STINE	RD		1100010	N				R	510
Julie	PETER	Karas	2006		STINE	RD		1100103	N				R	510
	JILL	Arstone	2034		STINE	RD		1100306	U				R	510
Shawna	SHANE	McKenna	2060		STINE	RD		1100290	Y				R	510
Lisa	Tom	James	2082		STINE	RD		1110633	N				R	510
Chastity	Jeff	Christy/Ivel	2126		STINE	RD		1100284	N				R	510
Elizabeth	Mike	Matusz	2150		STINE	RD		1100286	N				R	510
Hollis	Stan	Kaskey	2168		STINE	RD		1100186	N				R	510
Cathy	DOUGLAS	Mayer	2226		STINE	RD		1100282	Y				R	520
	GEORGE	TANINECZ	2193		STREETSBORO	RD		1110751	N				R	510
			2213		STREETSBORO	RD		1100498	U				R	510

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	KRISTIN	Hawkins	2227		STREETSBORO	RD		1100047	U				R	510
	Elizabeth	Duwalt	2295		STREETSBORO	RD		1100371	U				R	510
Laura	CHRISTOF	Gerak/Gibt	2354		STREETSBORO	RD		1100595	Y				R	510
			2366		STREETSBORO	RD	W	1100475	U				R	510
Norla	BRAD	Lamonte	2380		STREETSBORO	RD		1110713	U				R	510
Marilyn	Dewey	Hansen	2381		STREETSBORO	RD		1100198	Y				R	510
	Greg	Hansen	2427		STREETSBORO	RD		1100142	U				R	510
Carol	JOHN	Bentley	2473		STREETSBORO	RD		1100279	U				R	520
	SANDRA	Roth	2474		STREETSBORO	RD		1110603	N				R	510
Susan	Doug	Steidle	2492		STREETSBORO	RD	W	1110606	U				R	510
Jesse	John	KRUSINSK	2506		STREETSBORO	RD	W	1110609	N				R	510
Laura	Fred	Bidwell	2524		STREETSBORO	RD	W	1110605	N				R	510
Sandra	JAMES	Dietrich/Sa	2542		STREETSBORO	RD		1110604	N				R	510
			2572		STREETSBORO	RD	W	1110608	U				R	510
Carol	KEVIN	Kramer	2581		STREETSBORO	RD		1100110	U				R	510
Joann	John	Shega	2590		STREETSBORO	RD	W	1110610	N				R	510
			5061		VALLEY	DR		1100485	U				E	600

STEFANAI	EMILY	1026728	1019	W	STREETSBORO RD	
TRAPP	MARK	1000456	1019	W	STREETSBORO RD	
KIM	JOANNE	993813	1431		DELL RD	
NASH	JAMES	992977	1431		DELL RD	
WHITMOR	BRENDA	968339	1503		DELL RD	
WHITMOR	SEAN	964386	1503		DELL RD	
LITZINGEF	DENISE	454582	1508		MAIN ST	
LITZINGEF	LEONARD	207362	1508		MAIN ST	
LITZINGEF	MATTHEW	822706	1508		MAIN ST	
HAMMONI	JAMES	651164	1518		MAIN ST	
HAMMONI	KIM	651165	1518		MAIN ST	
HAMMONI	TREVOR	990523	1518		MAIN ST	
COOPER	CHARLEN	694117	1519		STINE RD	
COOPER	THOMAS	694099	1519		STINE RD	
ROYER	CHRISTIN	658435	1521		DELL RD	
ROYER	KEVIN	325588	1521		DELL RD	
JONES	GARY	64478	1528		STINE RD	
JONES	PAMELA	423178	1528		STINE RD	
SHAVER	PAUL	326052	1530		MAIN ST	
LIPPIAN	CHARMAI	949487	1531		MAIN ST	
BAUMAN	BARBARA	571456	1537	E	MILL ST	
BAUMAN	JAMES	571458	1537	E	MILL ST	
HAUBERG	MARGARE	95506	1539		STINE RD	
STEPHEN	CHRISTIN	425420	1539		STINE RD	
RAVANELI	BONNIE	30376	1542		MAIN ST	
SULZER	LAWRENC	273830	1542		MAIN ST	
GRIMES	PAULA	503389	1543		MAIN ST	
GRIMES	STEVEN	873784	1543		MAIN ST	
BRUNSWI	NANCY	207178	1550	E	MILL ST	
BRUNSWI	ROBERT	207179	1550	E	MILL ST	

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RODGERS	ALEX	852293	1557		MAIN ST									
BERTSCH	EVA	9226	1563	E	MILL ST									
SLOCUM	JOHN	979207	1563	E	MILL ST									
SLOCUM	KATHLEEI	923504	1563	E	MILL ST									
SLOCUM	RICHARD	371072	1563	E	MILL ST									
SUCHAN	DEBORAH	580346	1564		MAIN ST									
SUCHAN	TAYLOR	990185	1564		MAIN ST									
BADGER	ISABELLA	990206	1565		MAIN ST									
BADGER	JOSEPH	570730	1565		MAIN ST									
BADGER	LORI	777927	1565		MAIN ST									
KAPLAN	BARBARA	141978	1570		STINE RD									
KAPLAN	MICHAEL	141983	1570		STINE RD									
SCHOELE	MARY	363617	1601		STINE RD									
SCHOELE	RICHARD	457350	1601		STINE RD									
THOMPSC	KIMBERLY	623472	1622		STINE RD									
THOMPSC	RONALD	857360	1622		STINE RD									
NICHOLS	BRENDA	419576	1629		STINE RD									
SHANKLAI	DAVID	626670	1646		ORCHARD ST									
WESSEL	DAVID	739959	1648		ORCHARD ST									
WESSEL	STACEY	740409	1648		ORCHARD ST									
DEWESTE	KIMBERLE	1007811	1660		ORCHARD ST									
SESKES	DIANE	530763	1671		MAIN ST									
PADRUTT	JODI	432298	1677		STINE RD									
PADRUTT	MATTHEW	757427	1677		STINE RD									
PADRUTT	TERRY	207426	1677		STINE RD									
WALTERS	KAREN	454572	1678		MAIN ST									
WALTERS	THADEUS	968276	1678		MAIN ST									
BROWN	RICHARD	859141	1686		STINE RD									
BROWN	TERRA	859000	1686		STINE RD									
JOHNSON	DAVID	207324	1701		MAIN ST									
JOHNSON	RITA	267523	1701		MAIN ST									
LAHOSKI	DENISE	726182	1707		MAIN ST									
LAHOSKI	TERRY	549493	1707		MAIN ST									
KONTUR	ALLISON	744060	1710		STINE RD									
LAVICKA	ANDREW	753857	1715		MAIN ST									
MOYER	CHARLES	207414	1720		MAIN ST									
MOYER	MARIANNI	207415	1720		MAIN ST									
UNGER	BLANTON	794139	1727		MAIN ST									
UNGER	DOUGLAS	207533	1727		MAIN ST									
UNGER	LOIS	207534	1727		MAIN ST									
UNGER	MATTIE	824686	1727		MAIN ST									
SPENCER	AUSTIL	85229	1738		MAIN ST									
SPENCER	PATRICIA	362318	1738		MAIN ST									
ANDROS	EDWARD	743857	1741		MAIN ST									
BALAS	JURATE	745400	1741		MAIN ST									
REINHART	DAVID	880480	1745		STINE RD									
REINHART	TAMMI	879912	1745		STINE RD									
CLARKE	JEANNE	954903	1749		MAIN ST									

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CLARKE	TODD	563332	1749		MAIN ST									
PERRY	CHRISTIN	869908	1754		MAIN ST									
PRENETA	GREGORY	207432	1755		MAIN ST									
PRENETA	NORMA	302728	1755		MAIN ST									
CODY	DAVID	466313	1764		MAIN ST									
REINHART	ELIZABET	591035	1787		STINE RD									
REINHART	RALPH	343909	1787		STINE RD									
MYELLO	PEGGY	823108	1794		STINE RD									
MYELLO	RALPH	207421	1794		STINE RD									
MORGAN	ROCHELL	995592	1802		MAIN ST									
ROZNOVS	DEBORA	534064	1813		BRONSON ST									
ABBOTT	LINDSAY	826355	1815		STINE RD									
FIALA	LESLIE	552856	1815		STINE RD									
BARNHAR	AUSTIN	990515	1816		MAIN ST									
BARNHAR	GALE	531539	1816		MAIN ST									
BARNHAR	SUSAN	346807	1816		MAIN ST									
BAUMGAF	TOD	620383	1818		BRONSON ST									
DAMRON	ANGELA	888173	1824		BRONSON ST									
DAMRON	EUGENE	960458	1824		BRONSON ST									
SCHNEIDE	DANIEL	207486	1825		BRONSON ST									
SCHNEIDE	JANICE	207488	1825		BRONSON ST									
SCHNEIDE	PAMELA	207489	1825		BRONSON ST									
TESMER	NANCY	666958	1830		STINE RD									
SNEIDER	WILLIAM	630507	1832		BRONSON ST									
ANDERSO	BOBBY	831614	1834		MAIN ST									
ANDERSO	LORI	555546	1834		MAIN ST									
RODATT	FREDRICK	207462	1834		STINE RD									
RODATT	JULIA	454654	1834		STINE RD									
COLLINS	SHARON	207192	1839		BRONSON ST									
SULZER	TARA	957987	1841		MAIN ST									
HAAS	DANIEL	824986	1849		MAIN ST									
KROMPAC	CAROL	866171	1849		MAIN ST									
SETZEKOI	MATTHEW	828857	1854		STINE RD									
SETZEKOI	PAMELA	828795	1854		STINE RD									
SNEIDER	JANET	605839	1860		BRONSON ST									
SNEIDER	WILLIAM	575482	1860		BRONSON ST									
JOHNSTO	DEBRA	207327	1863		BRONSON ST									
JOHNSTO	GEORGE	207329	1863		BRONSON ST									
PETERSO	ERIC	582451	1868		MAIN ST									
DUFFEY-F	MAUREEN	456836	1869		BRONSON ST									
JOHNSTO	MARTIN	663903	1869		BRONSON ST									
TESMER	LEONA	207515	1874		STINE RD									
TESMER	TIMOTHY	334347	1874		STINE RD									
WISNIEW	KEN	913182	1876		MAIN ST									
HAGEN	LYDIA	972753	1880		BRONSON ST									
HAGEN	NAHIA	1002104	1880		BRONSON ST									
HAGEN	ROBERT	884464	1880		BRONSON ST									
LOGAN	EVERETT	985005	1883		BRONSON ST									

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LOGAN	LYNDA	607632	1883		BRONSON ST									
LOGAN	PAUL	608175	1883		BRONSON ST									
PERKO	DANIEL	342957	1883		STINE RD									
PERKO	LAURA	609670	1883		STINE RD									
RITCH	MICHAEL	687114	1886		MAIN ST									
GEDEON	BARBARA	764700	1893		MAIN ST									
NEWTON	BARRY	826119	1893		MAIN ST									
CLIFTON	NANCY	587927	1904		MAIN ST									
CLIFTON	WILLIAM	592154	1904		MAIN ST									
FRANKEN	KAREN	928448	1910		STINE RD									
FRANKEN	KENNETH	928470	1910		STINE RD									
ALVIS	JAMES	207145	1919		MAIN ST									
ALVIS	NINA	207146	1919		MAIN ST									
CARROLL	KARALYNI	959761	1919		MAIN ST									
RUTLEDG	POLLY	207477	1936		STINE RD									
RUTLEDG	ROBERT	702989	1936		STINE RD									
DAVIS	JANE	944193	1938		MAIN ST									
FOCAZIO	KENNETH	703102	1938		MAIN ST									
FOCAZIO	MARY	699938	1938		MAIN ST									
MILHOAN	JOSEPHIN	583038	1941		MAIN ST									
MILHOAN	LAWRENC	581659	1941		MAIN ST									
TESMER	PATRICIA	207516	1941		STINE RD									
FISHER	RICHARD	207241	1955		STINE RD									
WURZBAC	DANIEL	207557	1962		STINE RD									
WURZBAC	JEAN	207558	1962		STINE RD									
SCHALL	BRIAN	960982	1967		STINE RD									
SCHALL	JERRY	207483	1967		STINE RD									
SCHALL	MARY	424666	1967		STINE RD									
KACZMAR	EVELYN	454574	1985		MAIN ST									
KACZMAR	FRANK	454575	1985		MAIN ST									
LEITER	CAROLYN	168591	1990		STINE RD									
LEITER	ROBERT	437385	1990		STINE RD									
DERRINGI	CHAD	978059	1991		MAIN ST									
FOCARET	NANCY	504764	1991		MAIN ST									
FOCARET	ROBERT	535185	1991		MAIN ST									
MAYER	AARON	674949	1993		STINE RD									
MAYER	DAVID	207382	1993		STINE RD									
MAYER	LISA	705750	1993		STINE RD									
MAYER	WENDY	207389	1993		STINE RD									
PARSONS	JOYCE	853465	2001		STINE RD									
KARAS	JULIE	585048	2006		STINE RD									
KARAS	PETER	615054	2006		STINE RD									
HOLODY	DIANE	207304	2008		BRONSON ST									
MAZUR	DEBORAH	690451	2009		BRONSON ST									
MAZUR	JOSEPH	690353	2009		BRONSON ST									
ARSTONE	JILL	742276	2034		STINE RD									
MCKENNA	SHANE	678619	2060		STINE RD									
MCKENNA	SHAWNA	207373	2060		STINE RD									

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
DENT	RENEE	454528	2069		MAIN ST									
DENT	WILLIAM	207220	2069		MAIN ST									
MITCHELL	ERIC	878649	2074		BRONSON ST									
MITCHELL	NATALIE	496197	2074		BRONSON ST									
MITCHELL	ROGER	496196	2074		BRONSON ST									
BELLUARI	NICHOLAS	971108	2082		STINE RD									
JAMES	LISA	597956	2082		STINE RD									
JAMES	THOMAS	207320	2082		STINE RD									
NOVICKY	NOEL	1014884	2100		BISHOP LN									
ROSALES	ELIVD	984883	2100		BISHOP LN									
JAMES	NANCY	207319	2111		MAIN ST									
FRIEDMAI	GABRIEL	783584	2121		MAIN ST									
CHRISTY	CHASTITY	886259	2126		STINE RD									
IVELL	JEFFREY	892330	2126		STINE RD									
HARTSHO	CHRISTI	1003488	2150		STINE RD									
MATUSZ	ELIZABETI	948801	2150		STINE RD									
MATUSZ	MICHAEL	548805	2150		STINE RD									
KASKEY	HOLLIS	975945	2168		STINE RD									
KASKEY	STANLEY	975943	2168		STINE RD									
TANINECZ	GEORGE	672292	2193		MAIN ST									
TANINECZ	M	667647	2193		MAIN ST									
BRUVERIS	KAIJA	684400	2213		MAIN ST									
BRUVERIS	RON	862241	2213		MAIN ST									
ZAMPELLI	GEORGE	265686	2220		MAIN ST									
ZAMPELLI	ROSEMAF	265687	2220		MAIN ST									
MAYER	CATHERIN	576736	2226		STINE RD									
MAYER	DOUGLAS	207383	2226		STINE RD									
MAYER	JACOB	933106	2226		STINE RD									
HAWKINS	CHRISTOF	998844	2227		MAIN ST									
HAWKINS	KRISTIN	903983	2227	W	STREETSBORO RD									
MERCER	JACK	207391	2239		MAIN ST									
MERCER	MARCIA	454597	2239		MAIN ST									
DUWALDT	ELIZABETI	969347	2295		MAIN ST									
BERGDOF	REBECCA	582281	2310		MAIN ST									
BERGDOF	TIMOTHY	490705	2310		MAIN ST									
WAIGHT	DAVID	826445	2336		MAIN ST									
WAIGHT	EMIKO	1020719	2336		MAIN ST									
WAIGHT	GWEN	824887	2336		MAIN ST									
GERAK	LAURA	446549	2354	W	STREETSBORO RD									
GIBBS	CHRISTOF	985898	2354	W	STREETSBORO RD									
ADAMS	CAROL	207141	2355		MAIN ST									
BOLITHO	KAREN	781416	2380		MAIN ST									
LAMONTE	BRAD	1023170	2380	W	STREETSBORO RD									
LAMONTE	NORLA	1023172	2380	W	STREETSBORO RD									
HANSEN	MARILYN	454539	2381		MAIN ST									
HANSEN	ROBERT	366741	2381	W	STREETSBORO RD									
MELENCH	THEODOR	577864	2400		MAIN ST									
HANSEN	GREGORY	207279	2427	W	STREETSBORO RD									

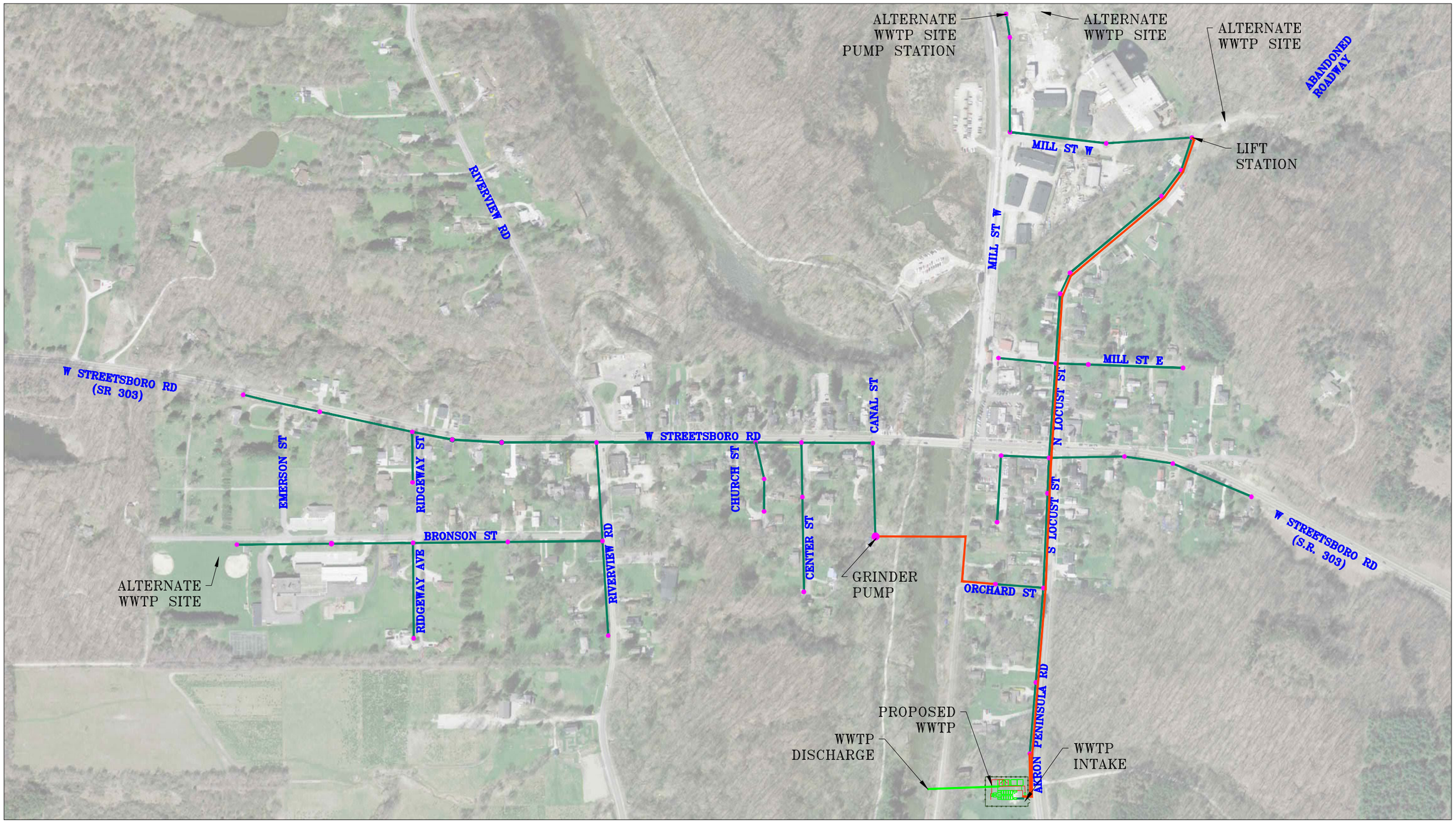
			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
ERNEST	JUDITH	562358	2436		MAIN ST									
HARLEY	JOHN	207284	2436		MAIN ST									
PRESLEY	MICHAEL	667774	2460		MAIN ST									
BENTLEY	CAROLYN	681694	2473		MAIN ST									
BENTLEY	JOHN	981490	2473		MAIN ST									
ROTH	BERNARD	1020420	2474		MAIN ST									
ROTH	SANDRA	1023104	2474		MAIN ST									
STEIDL	DOUGLAS	195938	2492		MAIN ST									
STEIDL	SUSAN	195939	2492		MAIN ST									
KRUSINSK	JESSE	990864	2506		MAIN ST									
KRUSINSK	JOHN	907370	2506		MAIN ST									
BIDWELL	FREDERIC	357775	2524		MAIN ST									
BIDWELL	LAURA EL	371835	2524		MAIN ST									
DIETRICH	SANDRA	876040	2542		MAIN ST									
SADENS	JAMES	979996	2542		MAIN ST									
KRAMER	CAROL	934294	2581		MAIN ST									
KRAMER	KEVIN	933329	2581		MAIN ST									
SHEGA	ERIC	922442	2590		MAIN ST									
SHEGA	JOANN	666654	2590		MAIN ST									
SHEGA	JOHN	682066	2590		MAIN ST									
SHEGA	ADAM	910807	2590	W	STREETSBORO RD									
COOK	BLANCHE	207203	4166		CONGER LN									
MERCER	SCOTT	796756	4186		CONGER LN									
MILLER	JAMES	691530	5712		RIVERVIEW RD									
MILLER	NANCY	289306	5712		RIVERVIEW RD									
SCHNEIDE	COURTNE	966899	5828		RIDGEWAY ST									
SCHNEIDE	DANIEL	207487	5828		RIDGEWAY ST									
SCHNEIDE	DANIELLE	830694	5828		RIDGEWAY ST									
SCHNEIDE	LINDA	370271	5828		RIDGEWAY ST									
PEDONE	BARBARA	575498	5829		RIDGEWAY ST									
PRESTON	PATRICIA	777625	5935		CENTER ST									
BARNETT	JAMES	602349	5950		AKRON PENINSULA RD									
BARNETT	NANCY	651521	5950		AKRON PENINSULA RD									
BEUTEL	BRITTANY	836615	5953		CENTER ST									
LEFFLER	SARA	866926	5953		CENTER ST									
ZOCOLO	GARY	951842	5960		AKRON PENINSULA RD									
PRICE	DYLAN	798430	5972		AKRON PENINSULA RD									
PRICE	KATHRYN	976752	5972		AKRON PENINSULA RD									
BURGY	MARSHAL	577449	5975		CHURCH ST									
GOSSELIN	JAMES	573013	5976		CENTER ST									
HAMPSHIF	JON	456889	5982		CENTER ST									
HAMPSHIF	LESLIE	456890	5982		CENTER ST									
REDDING	JOHN	955249	5988		CENTER ST									
BRALEK	REBECCA	725318	6001		CENTER ST									
WORKMAI	ELIZABETI	988767	6001		CENTER ST									
WORKMAI	GREGORY	977518	6001		CENTER ST									
CASSIDY	MANDY	954511	6003	S	LOCUST ST									
VANCE	CRAIG	632207	6008	S	LOCUST ST									

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
MOONEY	DAVID	684340	6010		CANAL ST									
BLATT	JOSH	899154	6016		PARKER CT									
ANDERSO	DOUGLAS	193191	6017	S	LOCUST ST									
ANDERSO	WENDY	454580	6017	S	LOCUST ST									
KNOTEK	DEREK	882095	6017	S	LOCUST ST									
KNOTEK	KENT	842180	6017	S	LOCUST ST									
PREECE	WILLIAM	1031996	6017	S	LOCUST ST									
DOTSON	KEITH	650923	6023	S	LOCUST ST									
POZZ	JENNIFER	629410	6023	S	LOCUST ST									
FISHER	JERALD	454533	6028	S	LOCUST ST									
FISHER	LINDA	207238	6028	S	LOCUST ST									
MOREHOL	CONSTAN	454602	6031	S	LOCUST ST									
MOREHOL	DAVID	207405	6031	S	LOCUST ST									
MOREHOL	MARIE	824133	6031	S	LOCUST ST									
TERZANO	JOHN	665966	6034	S	LOCUST ST									
HARAMIS	CAROL	207282	6050		RIVERVIEW RD									
HARAMIS	GEORGE	264985	6050		RIVERVIEW RD									
DOOLEY	JOHN	743580	6075		RIVERVIEW RD									
KARDOS	MARY JO/	744639	6075		RIVERVIEW RD									
HARRING	GIRDEN	207286	6078		RIVERVIEW RD									
BURDA	JEAN	504733	6081		RIVERVIEW RD									
BURDA	PAMELA	746939	6081		RIVERVIEW RD									
BLACK	SUZAN	507897	6084	N	LOCUST ST									
HRUSCH	PHILIP	755375	6085		RIVERVIEW RD									
CRAIG	LISA M	298254	6086		RIVERVIEW RD									
CRAIG	STEVEN	207211	6086		RIVERVIEW RD									
BELL	LARRY	668281	6089	N	LOCUST ST									
KACZMAR	MARY	454577	6093		RIVERVIEW RD									
KACZMAR	ROBERT	207336	6093		RIVERVIEW RD									
ANSON	CATHERIN	1035082	6109	N	LOCUST ST									
ANSON	MARK	1029739	6109	N	LOCUST ST									
CAREY	JO	666827	6117	N	LOCUST ST									
YAJKO	MICHAEL	977638	6117	N	LOCUST ST									
YAJKO	SARAH	977640	6117	N	LOCUST ST									
CHARNOC	DOUGLAS	904800	6122	N	LOCUST ST									
LOCKERT	JAMES	207363	6128		RIVERVIEW RD									
LOCKERT	LIA	583580	6128		RIVERVIEW RD									
POPE	CYNTHIA	676001	6134		RIDGEWAY ST									
POPE	LAUREN	1013256	6134		RIDGEWAY ST									
POPE	STEVEN	712305	6134		RIDGEWAY ST									
PEREZ	CARLEAN	656755	6138		RIVERVIEW RD									
FRANKLIN	MIRIAM	1013354	6156	N	LOCUST ST									
FRANKLIN	NEAL	1013003	6156	N	LOCUST ST									
SNIDER	MARGO	138005	6157	N	LOCUST ST									
URYCKI	ERIK	754458	6184		RIVERVIEW RD									
LAHOSKI	JUDITH	207354	6238		RIVERVIEW RD									
BOGGS	EDWARD	529975	6251		RIVERVIEW RD									
LAVICKA	PATRICIA	207356	6251		RIVERVIEW RD									

			House #	House# Addend	Street Name	Street Type	Direction	Parcel ID #	Dischagi ng?	Variance ?	Newer Subd?	Notes:	Zoning	Land Use Code
BALINSKI	LORENE	343807	6268		RIVERVIEW RD									
BALINSKI	KEVIN	454497	6278		RIVERVIEW RD									
KRACHINS	DANIEL	162719	6284		RIVERVIEW RD									
KRACHINS	SHARON	399600	6284		RIVERVIEW RD									
FARLING	RANDI	958042	6287		RIVERVIEW RD									
RODHE	CLAIRE	353159	6287		RIVERVIEW RD									
BARNES	SUSAN	941958	6290		RIVERVIEW RD									
REED	RICHARD	983625	6290		RIVERVIEW RD									
NOLAN	MATTHEW	931250	6302		RIVERVIEW RD									
NOLAN	NICOLE	931073	6302		RIVERVIEW RD									
DEMBKOV	GENE	663876	6312		RIVERVIEW RD									
GREZLIK	GLENDA	207268	6323		RIVERVIEW RD									
MORGAN	ANNETTE	207406	6326		RIVERVIEW RD									
MORGAN	THOMAS	454608	6326		RIVERVIEW RD									
SARGENT	ANN	1006049	6336		RIVERVIEW RD									
SARGENT	JASON	1006050	6336		RIVERVIEW RD									
WEIGAND	CHRISTIN	548645	6340		RIVERVIEW RD									
WEIGAND	CHRISTOF	754551	6340		RIVERVIEW RD									
MOORE	ALYSSA	700820	6342		RIVERVIEW RD									
MOORE	BRIAN	703161	6342		RIVERVIEW RD									
BRADFOR	JOHN	128035	6344		RIVERVIEW RD									
BRADFOR	LOIS	128036	6344		RIVERVIEW RD									
RIGGINS	WILMA	454646	6350		RIVERVIEW RD									
JOHNSTO	HEATHER	799271	6375		RIVERVIEW RD									
JOHNSTO	JOHN	795216	6375		RIVERVIEW RD									
SAFFLES	AMBER	709042	6376		RIVERVIEW RD									
SAFFLES	KEITH	655024	6376		RIVERVIEW RD									
BOOTH	MARY	896039	6404		RIVERVIEW RD									
STALKER	IAN	980696	6413		RIVERVIEW RD									
STALKER	LAURIE	448665	6413		RIVERVIEW RD									
STALKER	WILLIAM	87063	6413		RIVERVIEW RD									
CANDA	DAWN	512110	6421		RIVERVIEW RD									
CANDA	GREGORY	447481	6421		RIVERVIEW RD									
FLEMING	DIANE	761540	6454		RIVERVIEW RD									
FLEMING	MATTHEW	702673	6454		RIVERVIEW RD									
CULL	GEORGE	454526	6461		RIVERVIEW RD									
CULL	SANDRA	291971	6461		RIVERVIEW RD									
HUNT	CHARLES	190883	6476		RIVERVIEW RD									
DEYOUNG	LAURA	141106	6560		AKRON PENINSULA RD									
SORNA	JOHN	207499	6711		AKRON PENINSULA RD									
SORNA	NOREEN	207500	6711		AKRON PENINSULA RD									
STINSON	KIM	664998	6791		AKRON PENINSULA RD									
STINSON	STEPHEN	657817	6791		AKRON PENINSULA RD									

IX. APPENDIX I – COLLECTION SYSTEM LAYOUTS

VILLAGE OF PENINSULA
LAYOUT EXHIBIT



LEGEND
- MANHOLE
- GRINDER PUMP
- GRAVITY SEWER
- PRESSURE SEWER
- CORPORATION LIMIT

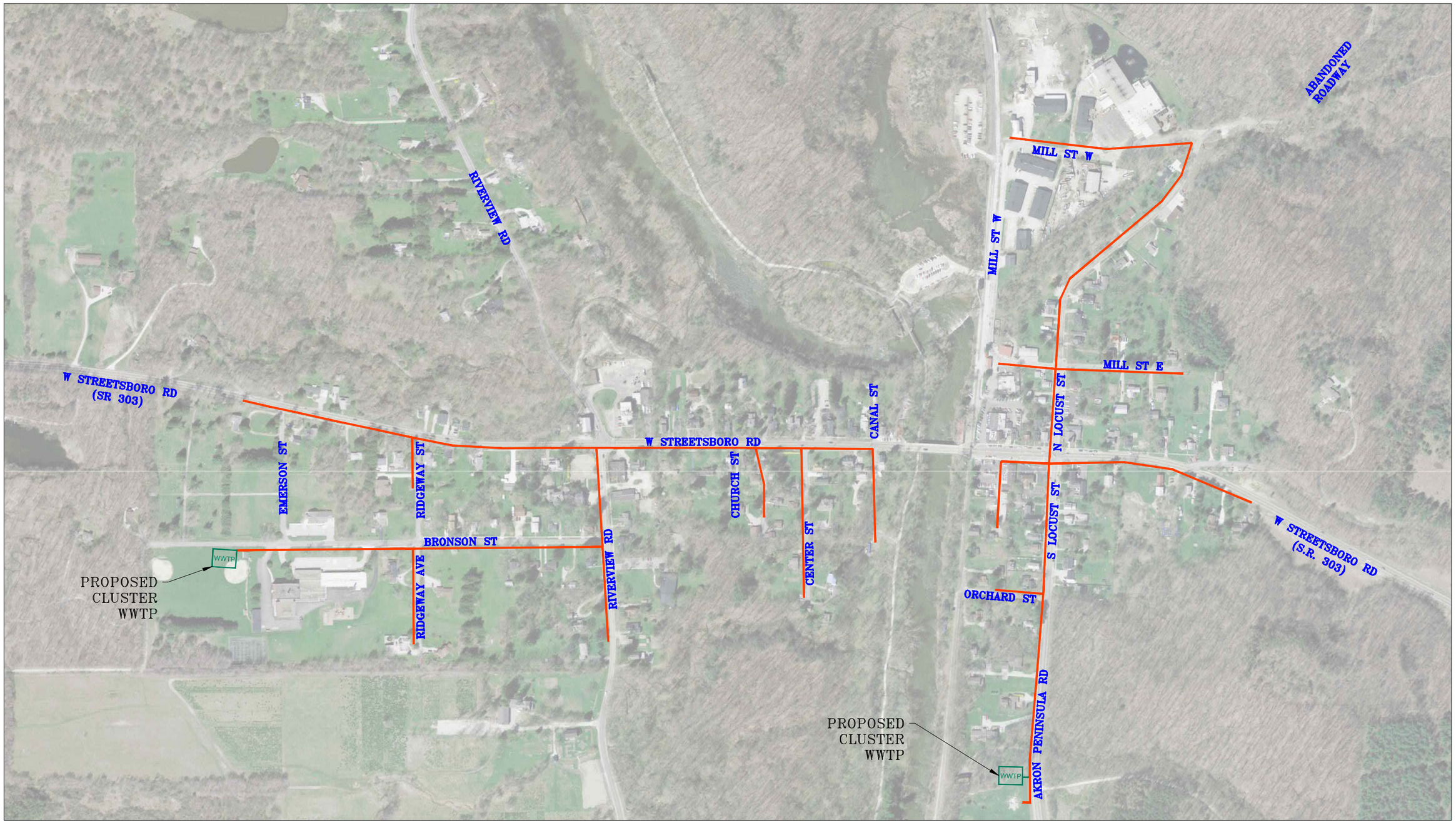
GRAVITY COLLECTION TO WWTP

0 400' 800'

SCALE IN FEET

Stantec
1311 W. HUNTER STREET LOGAN, OHIO 43138
(740) 380-2828 1-866-558-2828
FAX (740) 380-3535

VILLAGE OF PENINSULA
LAYOUT EXHIBIT



LEGEND
- MANHOLE
- GRINDER PUMP
- GRAVITY SEWER
- PRESSURE SEWER
- CORPORATION LIMIT

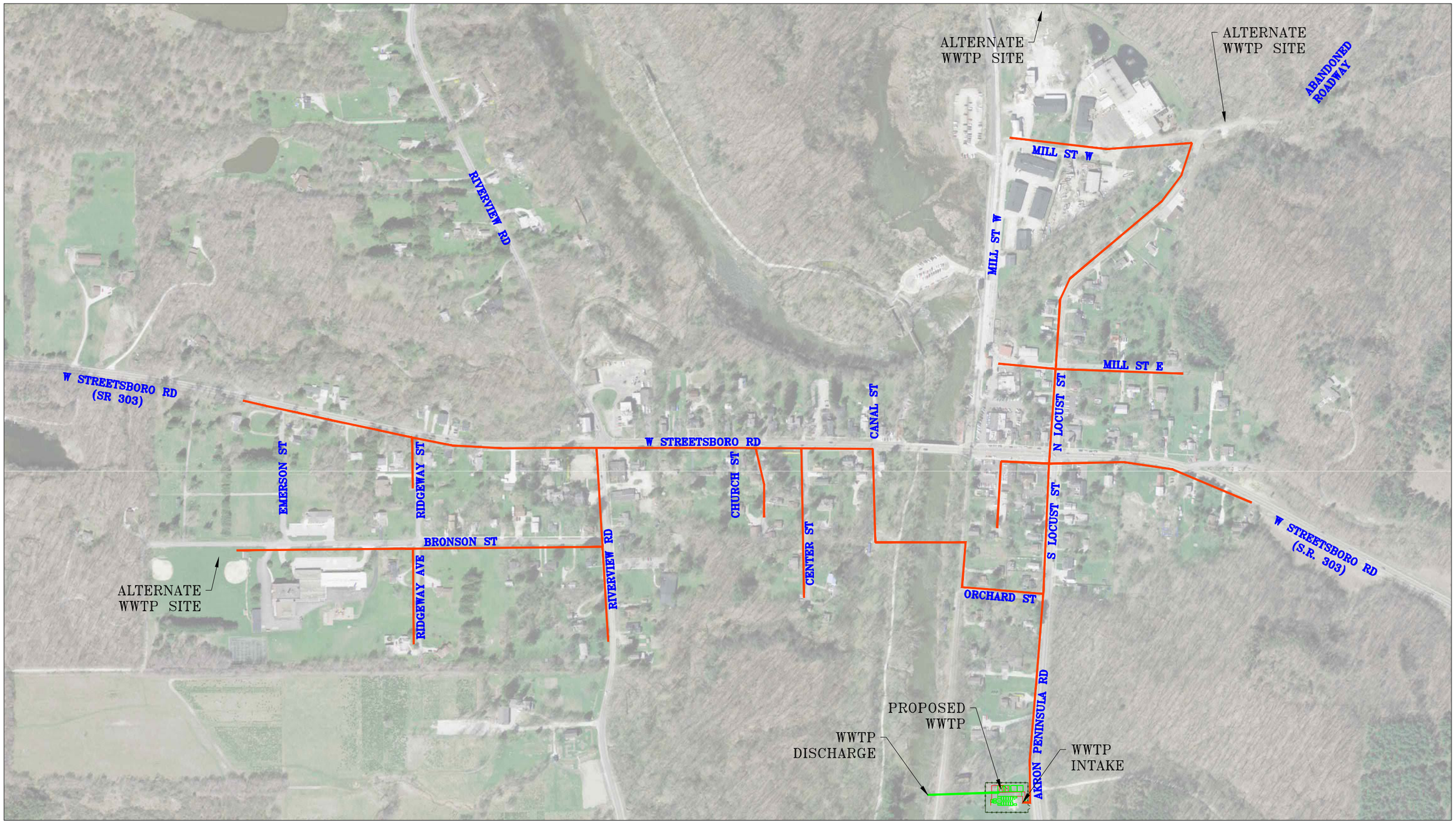
STEP COLLECTION TO CLUSTER WWTP

0 400' 800'

SCALE IN FEET

Stantec
1311 W. HUNTER STREET LOGAN, OHIO 43138
(740) 380-2828 1-866-558-2828
FAX (740) 380-3535

VILLAGE OF PENINSULA
LAYOUT EXHIBIT



LEGEND
- MANHOLE
- GRINDER PUMP
- GRAVITY SEWER
- PRESSURE SEWER
- CORPORATION LIMIT

PRESSURE COLLECTION TO WWTP

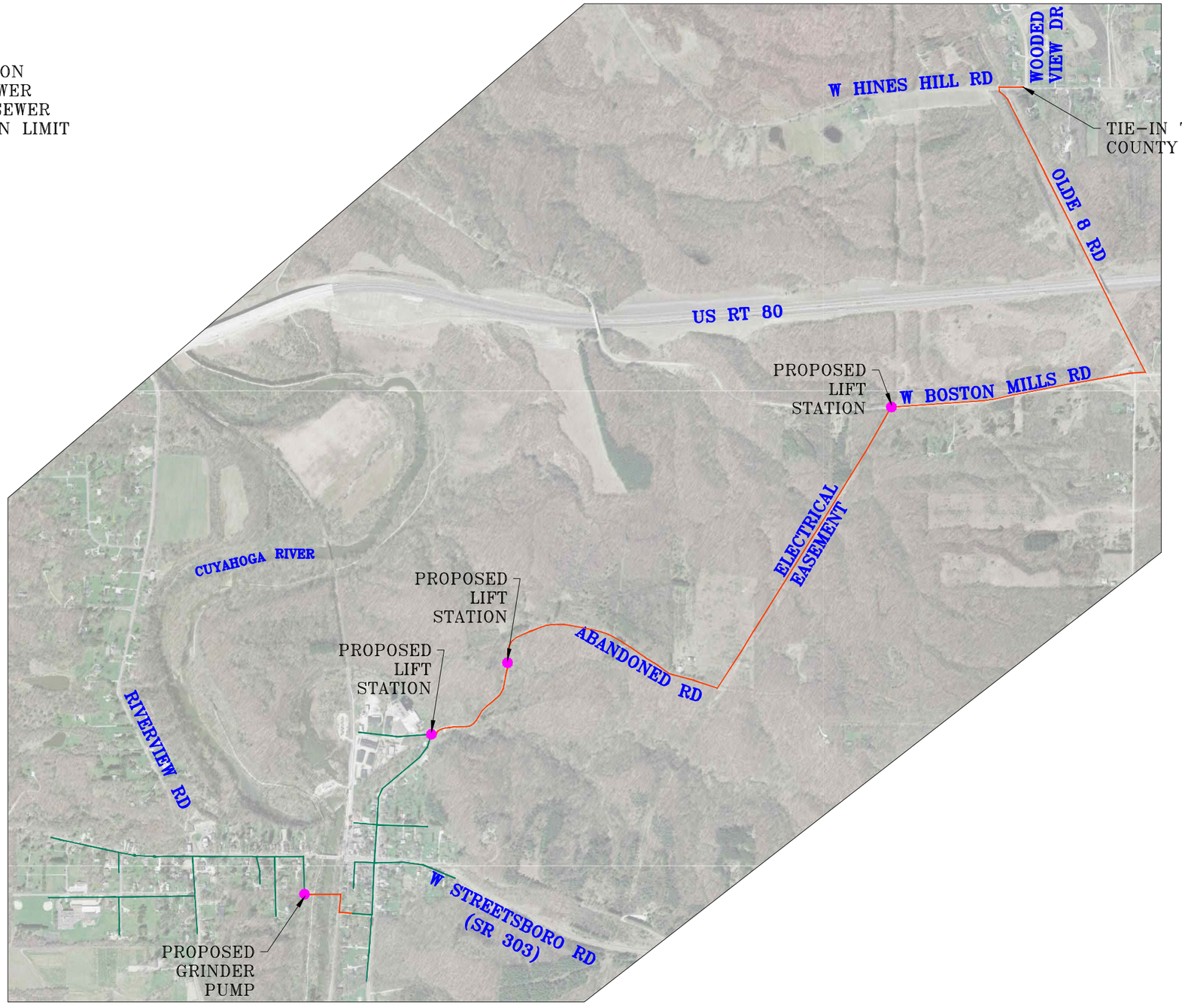
0 400' 800'

SCALE IN FEET

Stantec
1311 W. HUNTER STREET LOGAN, OHIO 43138
(740) 380-2828 1-866-558-2828
FAX (740) 380-3535

VILLAGE OF PENINSULA
LAYOUT EXHIBIT

LEGEND
- MANHOLE
- PUMP STATION
- GRAVITY SEWER
- PRESSURE SEWER
- CORPORATION LIMIT



GRAVITY COLLECTION TO REGIONAL WWTP

0 1200' 2400'

SCALE IN FEET

Stantec
1311 W. HUNTER STREET LOGAN, OHIO 43138
(740) 380-2828 1-866-558-2828
FAX (740) 380-3535

X. APPENDIX J – EPA WASTEWATER FACILITY REPORTS

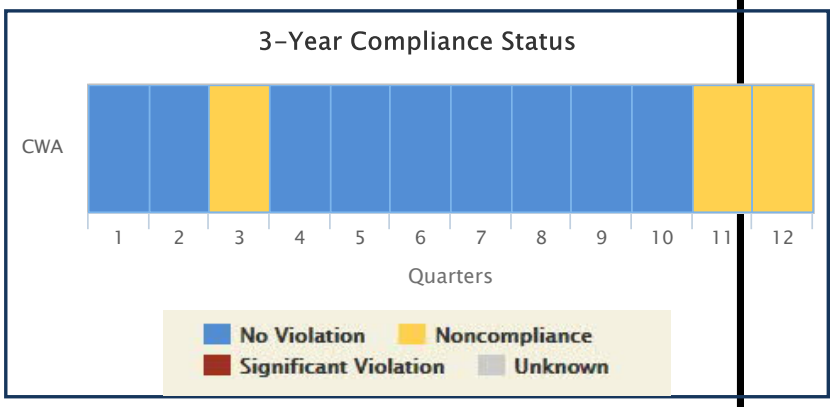
Detailed Facility Report

Facility Summary

NOVID FLLP

1593 MAIN ST., PENINSULA, OH 44264

FRS (Facility Registry Service) ID: 110059805322
EPA Region: 05
Latitude: 41.24123
Longitude: -81.54807
Locational Data Source: FRS
Industry: Sewerage Systems
Indian Country: N



Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs in NC (Non-Compliance) (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CWA	--	--	Noncompliance	4	0	--	--	--	--	--

Related Reports

CWA Pollutant Loading Report
CWA Effluent Charts

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): Minor, Permit Effective (OH0146137)
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110059805322					N	41.24123	-81.54807
ICP	CWA	OH0146137	Minor: NPDES Individual Permit	Effective		04/30/2019	N	41.24123	-81.54807

Facility Address

System	Statute	Identifier	Facility Name	Facility Address

FRS		110059805322	NOVID FLLP	1593 MAIN ST., PENINSULA, OH 44264
ICP	CWA	OH0146137	NOVID FLLP	1593 MAIN ST., PENINSULA, OH 44264

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Desc
ICP	OH0146137	4952	Sewerage Systems

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
No data records returned						

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Non-compliance)/HPV (High Priority Violation)	Description	Current As Of	Qtrs in NC (Non-Compliance) (of 12)
CWA	OH0146137	No		09/30/2016	3

Three Year Compliance Status by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13*
CWA (Source ID: OH0146137)		10/01-12/31/13	01/01-03/31/14	04/01-06/30/14	07/01-09/30/14	10/01-12/31/14	01/01-03/31/15	04/01-06/30/15	07/01-09/30/15	10/01-12/31/15	01/01-03/31/16	04/01-06/30/16	07/01-09/30/16	10/01-12/31/16
	Facility-Level Status	**No Viol**	**No Viol**	**In Viol**	**No Viol**	**No Viol**	**No Viol**	**No Viol**	**No Viol**	**No Viol**	**No Viol**	**In Viol**	**In Viol**	**In Viol**
	SNC (Significant Non-compliance)/RNC (Reportable Non-Compliance) History			V(NonRNCV)	R(Resolvd)							N(RptViol)	N(RptViol)	
	Permit Schedule Violations													
CWA	Schedule Event unachieved and not reported: Plan, Report, or Scope of Work											04-01-16	>>>	>>>

*Quarter 13 is draft/unofficial and has not been fully quality assured. Read more

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
No data records returned				

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS (Integrated Compliance Information System) Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP (Supplemental Environmental Project) Cost	Comp Action Cost
No data records returned										

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
OH0146137			041100020405	Boston Run-Cuyahoga River	Cuyahoga River	No		CAUSE UNKNOWN | HABITAT ALTERATIONS | NUTRIENTS | POLYCHLORINATED BIPHENYLS (PCBS)	No

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
04110002000025	Cuyahoga River	No	Yes	Yes	No	No	No

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter
No	Sulfur Dioxide

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

Radius of Area:	3	Land Area:	100%	Households in Area:	914
Center latitude:	41.24123	Water Area:	0%	Housing Units in Area:	996
Center Longitude:	-81.54807	Population Density:	80/sq.mi.	Households on Public Assistance:	14

Total Persons:	2,247	Percent Minority:	4%	Persons Below Poverty Level:	275

Race Breakdown	Persons (%)	Age Breakdown	Persons (%)
White:	2,172 (96.66%)	Child 5 years and younger:	91 (4.05%)
African-American:	27 (1.2%)	Minors 17 years and younger:	424 (18.87%)
Hispanic-Origin:	16 (.71%)	Adults 18 years and older:	1,823 (81.13%)
Asian/Pacific Islander:	26 (1.16%)	Seniors 65 years and older:	358 (15.93%)
American Indian:	1 (.04%)		
Other/Multiracial:	22 (.98%)		

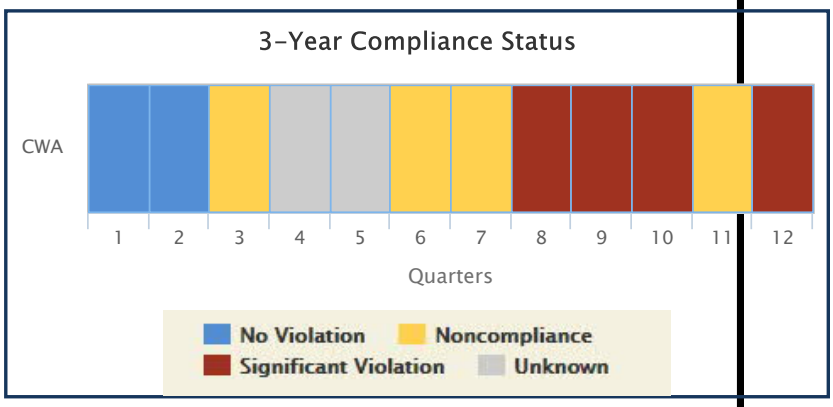
Education Level (Persons 25 & older)	Persons (%)	Income Breakdown	Households (%)
Less than 9th Grade:	6 (.37%)	Less than $15,000:	37 (4.29%)
9th through 12th Grade:	81 (4.97%)	$15,000 - $25,000:	41 (4.76%)
High School Diploma:	455 (27.91%)	$25,000 - $50,000:	134 (15.55%)
Some College/2-yr:	397 (24.36%)	$50,000 - $75,000:	149 (17.29%)
B.S./B.A. or More:	691 (42.39%)	Greater than $75,000:	501 (58.12%)

Detailed Facility Report

Facility Summary

WOODRIDGE INTERMEDIATE SCHOOL
1930 BRONSON RD, PENINSULA, OH 44264

FRS (Facility Registry Service) ID: 110006270622
EPA Region: 05
Latitude: 41.24028
Longitude: -81.55909
Locational Data Source: FRS
Industry: Elementary And Secondary Schools
Indian Country: N



Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs in NC (Non-Compliance) (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CWA	1	02/26/2016	Significant Violation	9	4	2	--	--	--	--

Related Reports

CWA Pollutant Loading Report
CWA Effluent Charts

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): Minor, Permit Effective (OH0146218)
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110006270622					N	41.24028	-81.55909

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
ICP	CWA	OH0146218	Minor: NPDES Individual Permit	Effective		05/31/2019	N	41.2395083	-81.5601945

Facility Address

Facility Address

System	Statute	Identifier	Facility Name	Facility Address
FRS		110006270622	WOODRIDGE INTERMEDIATE SCHOOL	1930 BRONSON RD, PENINSULA, OH 44264
ICP	CWA	OH0146218	WOODRIDGE INTERMEDIATE SCHOOL	1930 BRONSON AVE, PENINSULA, OH 44264

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Desc
ICP	OH0146218	8211	Elementary And Secondary Schools

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
CWA	OH0146218	ICP	Evaluation	State	02/26/2016	

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Non-compliance)/HPV (High Priority Violation)	Description	Current As Of	Qtrs in NC (Non-Compliance) (of 12)
CWA	OH0146218	Yes		09/30/2016	8

Three Year Compliance Status by Quarter

Statute	Program/Pollutant/Violation Type			QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13*
	CWA (Source ID: OH0146218)			10/01-12/31/13	01/01-03/31/14	04/01-06/30/14	07/01-09/30/14	10/01-12/31/14	01/01-03/31/15	04/01-06/30/15	07/01-09/30/15	10/01-12/31/15	01/01-03/31/16	04/01-06/30/16	07/01-09/30/16	10/01-12/31/16
	Facility-Level Status			**No Viol**	**No Viol**	**In Viol**	**Unk**	**Unk**	**In Viol**	**In Viol**	**SNC/Cat 1**	**SNC/Cat 1**	**SNC/Cat 1**	**In Viol**	**SNC/Cat 1**	**In Viol**
	SNC (Significant Non-compliance)/RNC (Reportable Non-Compliance) History					V(NonRNCV)	W(N/A)	W(N/A)	V(NonRNCV)		E(EffViol)	E(EffViol)	E(EffViol)	N(RptViol)	S(CSchVio)	
	Pollutant	**Disch Point**	**Freq**													
CWA	BOD, carbonaceous [5 day, 20 C]	001	Mthly									144%				
CWA	BOD, carbonaceous [5 day, 20 C]	001	NMth									63%				
CWA	Solids, total suspended	001	Mthly						23%		**377%**	**380%**	**233%**			
CWA	Solids, total suspended	001	NMth								218%	220%	122%			
	Permit Schedule Violations															
CWA	Schedule Event unachieved and not reported: Complete Required Work or On-Site Construction													04-01-16	>>>	>>>
CWA	Schedule Event unachieved and not reported: Plan, Report, or Scope of Work									06-01-15	>>>	>>>	>>>	>>>	>>>	>>>

*Quarter 13 is draft/unofficial and has not been fully quality assured. Read more

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
CWA	OH0146218	Letter of Violation/ Warning Letter	State	05/10/2016
CWA	OH0146218	Letter of Violation/ Warning Letter	State	03/02/2016

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS (Integrated Compliance Information System) Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP (Supplemental Environmental Project) Cost	Comp Action Cost
No data records returned										

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
OH0146218			041100020405	Boston Run-Cuyahoga River	Cuyahoga River	No		CAUSE UNKNOWN | HABITAT ALTERATIONS | NUTRIENTS | POLYCHLORINATED BIPHENYLS (PCBS)	Yes

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
04110002000329	Slipper Run	No	Yes	Yes	No	No	No

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter
No	Sulfur Dioxide

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are

based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

Radius of Area:	3	Land Area:	100%	Households in Area:	859
Center latitude:	41.23953	Water Area:	0%	Housing Units in Area:	938
Center Longitude:	-81.5591	Population Density:	74/sq.mi.	Households on Public Assistance:	10
Total Persons:	2,087	Percent Minority:	5%	Persons Below Poverty Level:	207

Race Breakdown	Persons (%)	Age Breakdown	Persons (%)
White:	2,000 (95.83%)	Child 5 years and younger:	77 (3.69%)
African-American:	29 (1.39%)	Minors 17 years and younger:	393 (18.83%)
Hispanic-Origin:	18 (.86%)	Adults 18 years and older:	1,693 (81.12%)
Asian/Pacific Islander:	37 (1.77%)	Seniors 65 years and older:	339 (16.24%)
American Indian:	1 (.05%)		
Other/Multiracial:	20 (.96%)		

Education Level (Persons 25 & older)	Persons (%)	Income Breakdown	Households (%)
Less than 9th Grade:	5 (.33%)	Less than $15,000:	29 (3.6%)
9th through 12th Grade:	74 (4.86%)	$15,000 - $25,000:	36 (4.47%)
High School Diploma:	421 (27.64%)	$25,000 - $50,000:	119 (14.76%)
Some College/2-yr:	369 (24.23%)	$50,000 - $75,000:	139 (17.25%)
B.S./B.A. or More:	654 (42.94%)	Greater than $75,000:	483 (59.93%)

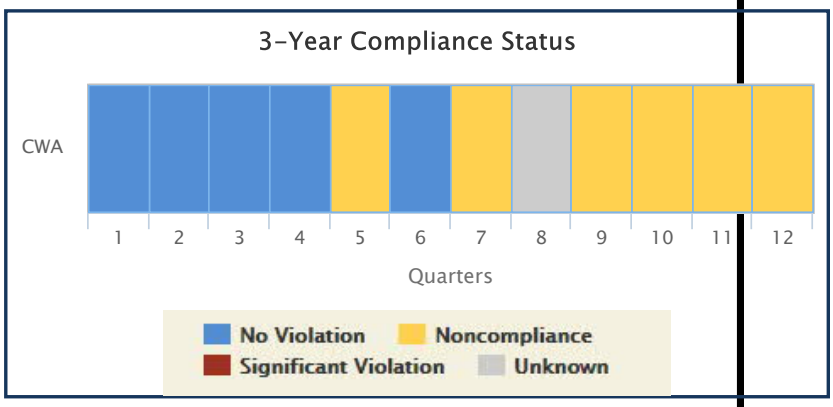
Detailed Facility Report

Facility Summary

RIVERVIEW COURT PROPERTY

1770 MAIN ST, PENINSULA, OH 44264

FRS (Facility Registry Service) ID: 110063023865
EPA Region: 05
Latitude: 41.24141
Longitude: -81.55474
Locational Data Source: FRS
Industry: Membership Organizations
Indian Country: N



Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs in NC (Non-Compliance) (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CWA	1	04/13/2016	**Noncompliance**	7	0	1	--	--	--	--

Related Reports

CWA Pollutant Loading Report
CWA Effluent Charts

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): Minor, Permit Effective (OH0146315)
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110063023865					N	41.24141	-81.55474
ICP	CWA	OH0146315	Minor: NPDES Individual Permit	Effective		10/31/2019	N	41.24137	-81.55482

Facility Address

System	Statute	Identifier	Facility Name	Facility Address

FRS		110063023865	RIVERVIEW COURT PROPERTY	1770 MAIN ST, PENINSULA, OH 44264
ICP	CWA	OH0146315	RIVERVIEW COURT PROPERTY	1770 MAIN ST, PENINSULA, OH 44264

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Desc
ICP	OH0146315	8699	Membership Organizations

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
CWA	OH0146315	ICP	Evaluation	State	04/13/2016	

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Non-compliance)/HPV (High Priority Violation)	Description	Current As Of	Qtrs in NC (Non-Compliance) (of 12)
CWA	OH0146315	No		09/30/2016	6

Three Year Compliance Status by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13*
CWA (Source ID: OH0146315)		10/01-12/31/13	01/01-03/31/14	04/01-06/30/14	07/01-09/30/14	10/01-12/31/14	01/01-03/31/15	04/01-06/30/15	07/01-09/30/15	10/01-12/31/15	01/01-03/31/16	04/01-06/30/16	07/01-09/30/16	10/01-12/31/16
	Facility-Level Status	**No Viol**	**No Viol**	**No Viol**	**No Viol**	**In Viol**	**No Viol**	**In Viol**	**Unk**	**In Viol**	**In Viol**	**In Viol**	**In Viol**	**In Viol**
	SNC (Significant Non-compliance)/RNC (Reportable Non-Compliance) History					V(NonRNCV)		V(NonRNCV)	W(N/A)	W(N/A)	W(N/A)	W(N/A)	W(N/A)	
	Permit Schedule Violations													
CWA	Schedule Event unachieved and not reported: Achieve Final Compliance With Emission or Discharge Limits													11-01-16
CWA	Schedule Event unachieved and not reported: Complete Required Work or On-Site Construction												09-01-16	>>>
CWA	Schedule Event unachieved and not reported: Plan, Report, or Scope of Work									11-01-15	>>>	>>>	>>>	>>>

*Quarter 13 is draft/unofficial and has not been fully quality assured. Read more

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
CWA	OH0146315	Letter of Violation/ Warning Letter	State	04/18/2016

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS (Integrated Compliance Information System) Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP (Supplemental Environmental Project) Cost	Comp Action Cost
No data records returned										

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
OH0146315			041100020405	Boston Run-Cuyahoga River	Cuyahoga River	No		CAUSE UNKNOWN | HABITAT ALTERATIONS | NUTRIENTS | POLYCHLORINATED BIPHENYLS (PCBS)	No

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
04110002000329	Slipper Run	No	Yes	Yes	No	No	No

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter
No	Sulfur Dioxide

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

Radius of Area:	3	Land Area:	100%	Households in Area:	889
Center latitude:	41.24105	Water Area:	0%	Housing Units in Area:	970
Center Longitude:	-81.55474	Population Density:	77/sq.mi.	Households on Public Assistance:	12

Total Persons:	2,187	Percent Minority:	5%	Persons Below Poverty Level:	234

Race Breakdown	Persons (%)	Age Breakdown	Persons (%)
White:	2,105 (96.25%)	Child 5 years and younger:	87 (3.98%)
African-American:	29 (1.33%)	Minors 17 years and younger:	416 (19.02%)
Hispanic-Origin:	18 (.82%)	Adults 18 years and older:	1,772 (81.02%)
Asian/Pacific Islander:	31 (1.42%)	Seniors 65 years and older:	349 (15.96%)
American Indian:	1 (.05%)		
Other/Multiracial:	22 (1.01%)		

Education Level (Persons 25 & older)	Persons (%)	Income Breakdown	Households (%)
Less than 9th Grade:	6 (.38%)	Less than $15,000:	31 (3.69%)
9th through 12th Grade:	78 (4.91%)	$15,000 - $25,000:	37 (4.41%)
High School Diploma:	439 (27.61%)	$25,000 - $50,000:	126 (15.02%)
Some College/2-yr:	383 (24.09%)	$50,000 - $75,000:	144 (17.16%)
B.S./B.A. or More:	684 (43.02%)	Greater than $75,000:	501 (59.71%)

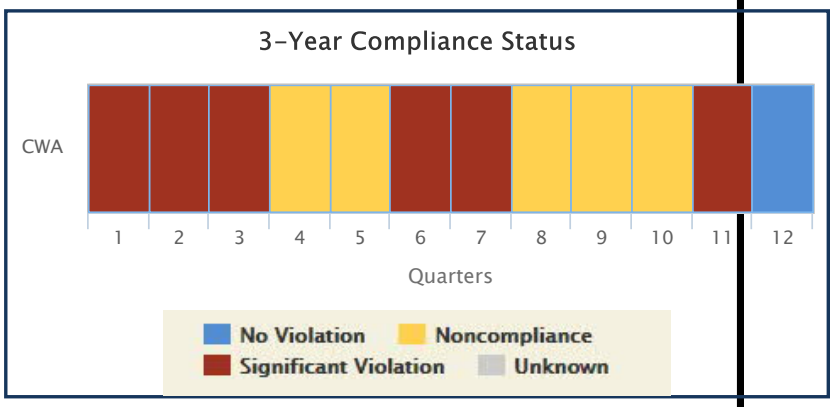
Detailed Facility Report

Facility Summary

WINKING LIZARD

1615 MAIN ST, PENINSULA, OH 44269

FRS (Facility Registry Service) ID: 110011015418
EPA Region: 05
Latitude: 41.24128
Longitude: -81.549162
Locational Data Source: FRS
Industry: Eating Places
Indian Country: N



Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs in NC (Non-Compliance) (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CWA	1	05/08/2015	**Noncompliance**	12	6	--	--	--	--	--

Related Reports

CWA Pollutant Loading Report
CWA Effluent Charts

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): Minor, Permit Effective (OH0103063)
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110011015418					N	41.24128	-81.549162
ICP	CWA	OH0103063	Minor: NPDES Individual Permit	Effective	Biosolids	06/30/2017	N	41.24263	-81.54891

Facility Address

System	Statute	Identifier	Facility Name	Facility Address

FRS		110011015418	WINKING LIZARD	1615 MAIN ST, PENINSULA, OH 44269
ICP	CWA	OH0103063	WINKING LIZARD	1615 MAIN ST, PENINSULA, OH 44269

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Desc
ICP	OH0103063	5812	Eating Places

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
CWA	OH0103063	ICP	Evaluation	State	05/08/2015	

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Non-compliance)/HPV (High Priority Violation)	Description	Current As Of	Qtrs in NC (Non-Compliance) (of 12)
CWA	OH0103063	No		09/30/2016	11

Three Year Compliance Status by Quarter

Statute	Program/Pollutant/Violation Type			QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12
CWA (Source ID: OH0103063)				10/01-12/31/13	01/01-03/31/14	04/01-06/30/14	07/01-09/30/14	10/01-12/31/14	01/01-03/31/15	04/01-06/30/15	07/01-09/30/15	10/01-12/31/15	01/01-03/31/16	04/01-06/30/16	07/01-09/30
	Facility-Level Status			**SNC/Cat 1**	**SNC/Cat 1**	**SNC/Cat 1**	**In Viol**	**In Viol**	**SNC/Cat 1**	**SNC/Cat 1**	**In Viol**	**In Viol**	**In Viol**	**SNC/Cat 1**	**No Viol**
	SNC (Significant Non-compliance)/RNC (Reportable Non-Compliance) History			E(EffViol)	E(EffViol)	E(EffViol)	R(Resolvd)	V(NonRNCV)	E(EffViol)	E(EffViol)	R(Resolvd)	V(NonRNCV)	V(NonRNCV)	E(EffViol)	R(Resolv
	Pollutant	**Disch Point**	**Freq**												
CWA	BOD, carbonaceous [5 day, 20 C]	001	Mthly	**110%**	**1329%**	**852%**			**519%**	**357%**					
CWA	BOD, carbonaceous [5 day, 20 C]	001	NMth	42%	868%	545%			319%	210%					
CWA	Chlorine, total residual	001	NMth							18900%					
CWA	Nitrogen, ammonia total [as N]	001	Mthly		**418%**				**876%**	**261%**					
CWA	Nitrogen, ammonia total [as N]	001	NMth		258%				575%	150%					
CWA	Oil and grease [soxhlet extr.] tot.	001	NMth						**330%**						
CWA	Oxygen, dissolved [DO]	001	Neither	5%	15%	50%		33%	2%	70%		26%			
CWA	Solids, total suspended	001	Mthly	**700%**	**4780%**	**48%**		**820%**	**1420%**	**420%**			**42%**	**80%**	

Statute	Program/Pollutant/Violation Type			QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12
CWA	Solids, total suspended	001	NMth	441%	3197%			522%	927%	251%				22%	
CWA	pH	001	Neither	LIMIT VIOL		LIMIT VIOL	LIMIT VIOL	LIMIT VIOL	LIMIT VIOL	LIMIT VIOL	LIMIT VIOL				

*Quarter 13 is draft/unofficial and has not been fully quality assured. Read more

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
No data records returned				

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS (Integrated Compliance Information System) Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP (Supplemental Environmental Project) Cost	Comp Action Cost
No data records returned										

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
OH0103063			041100020405	Boston Run-Cuyahoga River		No		CAUSE UNKNOWN | HABITAT ALTERATIONS | NUTRIENTS | POLYCHLORINATED BIPHENYLS (PCBS)	No

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
04110002000624	Boston Run	No	Yes	Yes	No	No	No

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter
No	Sulfur Dioxide

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

Radius of Area:	3	Land Area:	100%	Households in Area:	907
Center latitude:	41.24128	Water Area:	0%	Housing Units in Area:	987
Center Longitude:	-81.54917	Population Density:	79/sq.mi.	Households on Public Assistance:	14
Total Persons:	2,227	Percent Minority:	4%	Persons Below Poverty Level:	266

Race Breakdown	Persons (%)	Age Breakdown	Persons (%)
White:	2,151 (96.59%)	Child 5 years and younger:	90 (4.04%)
African-American:	26 (1.17%)	Minors 17 years and younger:	419 (18.81%)
Hispanic-Origin:	16 (.72%)	Adults 18 years and older:	1,808 (81.19%)
Asian/Pacific Islander:	27 (1.21%)	Seniors 65 years and older:	356 (15.99%)
American Indian:	1 (.04%)		
Other/Multiracial:	21 (.94%)		

Education Level (Persons 25 & older)	Persons (%)	Income Breakdown	Households (%)
Less than 9th Grade:	6 (.37%)	Less than $15,000:	36 (4.21%)
9th through 12th Grade:	80 (4.96%)	$15,000 - $25,000:	40 (4.68%)
High School Diploma:	450 (27.88%)	$25,000 - $50,000:	132 (15.44%)
Some College/2-yr:	392 (24.29%)	$50,000 - $75,000:	148 (17.31%)
B.S./B.A. or More:	686 (42.5%)	Greater than $75,000:	499 (58.36%)

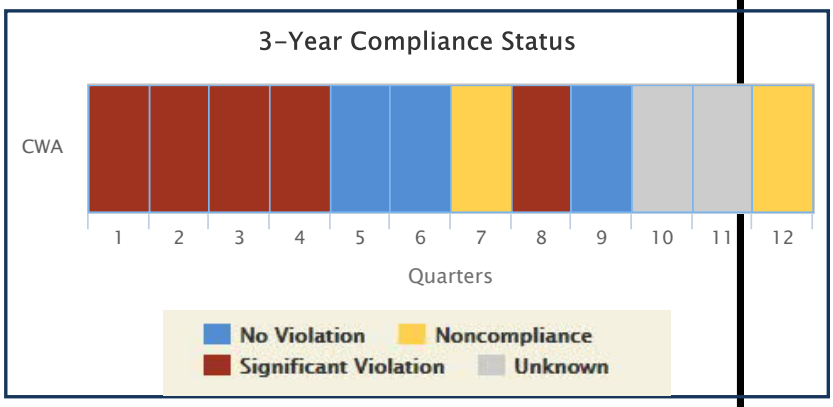
Detailed Facility Report

Facility Summary

FISHER'S CAFE AND PUB

1607 MAIN ST, PENINSULA, OH 44264

FRS (Facility Registry Service) ID: 110006269778
EPA Region: 05
Latitude: 41.24127
Longitude: -81.54894
Locational Data Source: FRS
Industry: Drinking Places
Indian Country: N



Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Compliance Status	Qtrs in NC (Non-Compliance) (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CWA	1	05/08/2015	**Noncompliance**	8	5	1	--	--	--	--

Related Reports

CWA Pollutant Loading Report
CWA Effluent Charts

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): Minor, Permit Admin Continued (OH0130044)
Resource Conservation and Recovery Act (RCRA): No Information
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110006269778					N	41.24127	-81.54894
ICP	CWA	OH0130044	Minor: NPDES Individual Permit	Admin Continued		04/30/2013	N	41.24075	-81.549167

Facility Address

System	Statute	Identifier	Facility Name	Facility Address

FRS		110006269778	FISHER'S CAFE AND PUB	1607 MAIN ST, PENINSULA, OH 44264
ICP	CWA	OH0130044	FISHERS CAFE & PUB	1607 MAIN STREET, PENINSULA, OH 44264

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Desc
ICP	OH0130044	5813	Drinking Places

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
CWA	OH0130044	ICP	Evaluation	State	05/08/2015	

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Non-compliance)/HPV (High Priority Violation)	Description	Current As Of	Qtrs in NC (Non-Compliance) (of 12)
CWA	OH0130044	No		09/30/2016	7

Three Year Compliance Status by Quarter

Statute	Program/Pollutant/Violation Type			QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13*
	CWA (Source ID: OH0130044)			10/01-12/31/13	01/01-03/31/14	04/01-06/30/14	07/01-09/30/14	10/01-12/31/14	01/01-03/31/15	04/01-06/30/15	07/01-09/30/15	10/01-12/31/15	01/01-03/31/16	04/01-06/30/16	07/01-09/30/16	10/01-12/31/16
	Facility-Level Status			**SNC/Cat 1**	**SNC/Cat 1**	**SNC/Cat 1**	**SNC/Cat 1**	**No Viol**	**No Viol**	**In Viol**	**SNC/Cat 1**	**No Viol**	**Unk**	**Unk**	**In Viol**	**In Viol**
	SNC (Significant Non-compliance)/RNC (Reportable Non-Compliance) History			E(EffViol)	E(EffViol)	E(EffViol)	E(EffViol)	R(Resolvd)		V(NonRNCV)	E(EffViol)	R(Resolvd)	W(N/A)	W(N/A)	W(N/A)	
	Pollutant	**Disch Point**	**Freq**													
CWA	BOD, carbonaceous [5 day, 20 C]	001	Mthly	**200%**	**60%**	**340%**				67%					570%	
CWA	BOD, carbonaceous [5 day, 20 C]	001	NMth	100%	7%	193%				11%					347%	
CWA	Coliform, fecal MF, MFC broth, 44.5 C	001	Mthly							100%						
CWA	Nitrogen, ammonia total [as N]	001	Mthly	**80%**	**160%**	**3300%**	**750%**			**1700%**	**1300%**				1300%	7%
CWA	Nitrogen, ammonia total [as N]	001	NMth	20%	73%	2167%	467%			1100%	833%				833%	
CWA	Oxygen, dissolved [DO]	001	Neither		23%		10%			92%	25%				92%	48%
CWA	Solids, total suspended	001	Mthly		8%	217%				17%						25%
CWA	Solids, total suspended	001	NMth			111%										

*Quarter 13 is draft/unofficial and has not been fully quality assured. Read more

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
CWA	OH0130044	Notice of Violation	State	05/10/2012

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS (Integrated Compliance Information System) Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP (Supplemental Environmental Project) Cost	Comp Action Cost
No data records returned										

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OH0130044			041100020405	Boston Run-Cuyahoga River	CUY. RIVER VIA STM SWR	No		CAUSE UNKNOWN | HABITAT ALTERATIONS | NUTRIENTS | POLYCHLORINATED BIPHENYLS (PCBS)	Yes

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
04110002000025	Cuyahoga River	No	Yes	Yes	No	No	No

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter
No	Sulfur Dioxide

Pollutants

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